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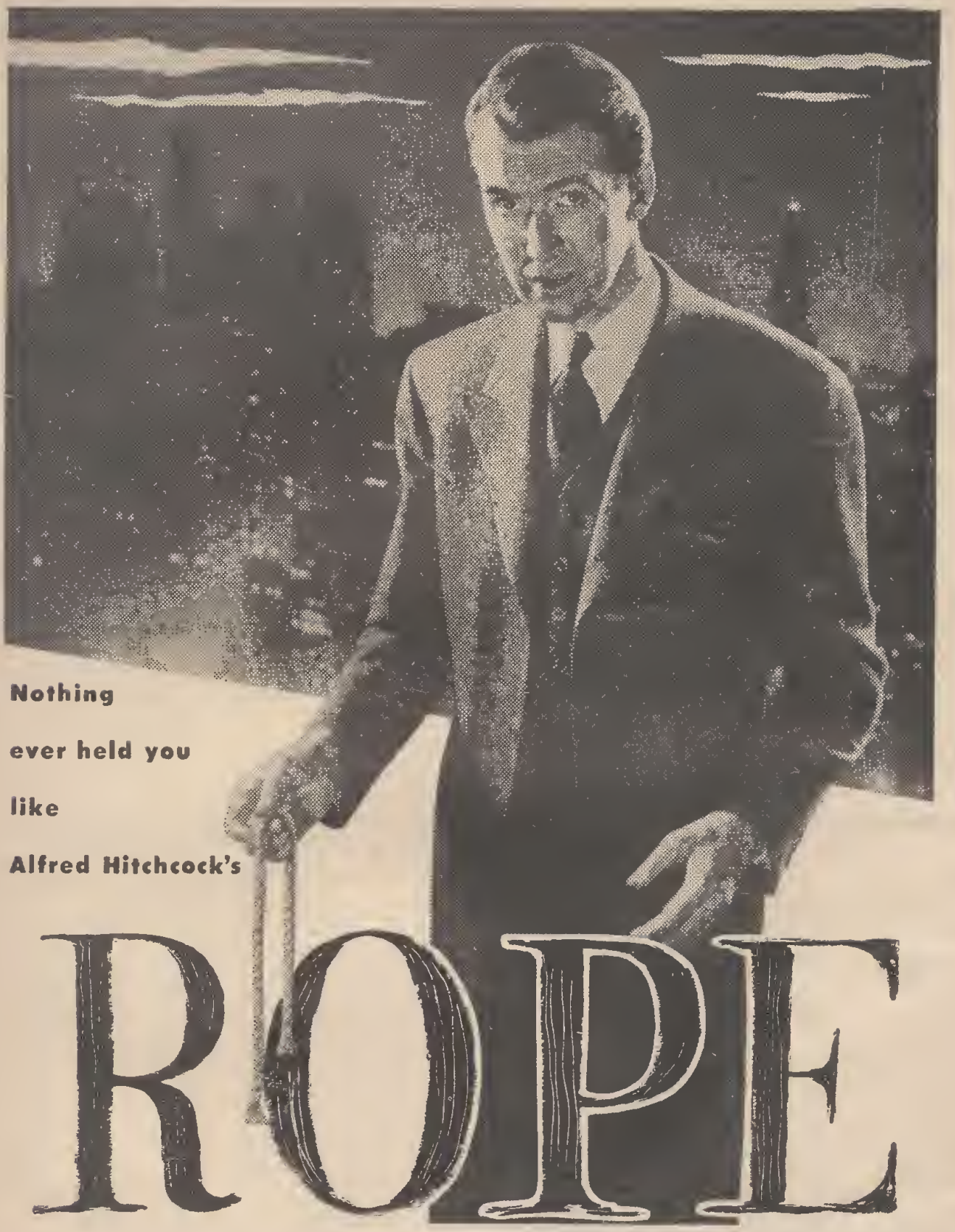

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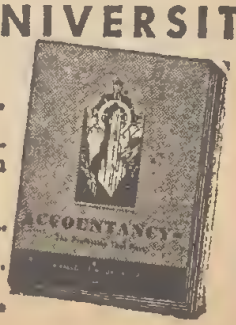

STARTLING STORIES

Vol. 18, No. 3 A THRILLING PUBLICATION January, 1949

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By HENRY KUTTNER

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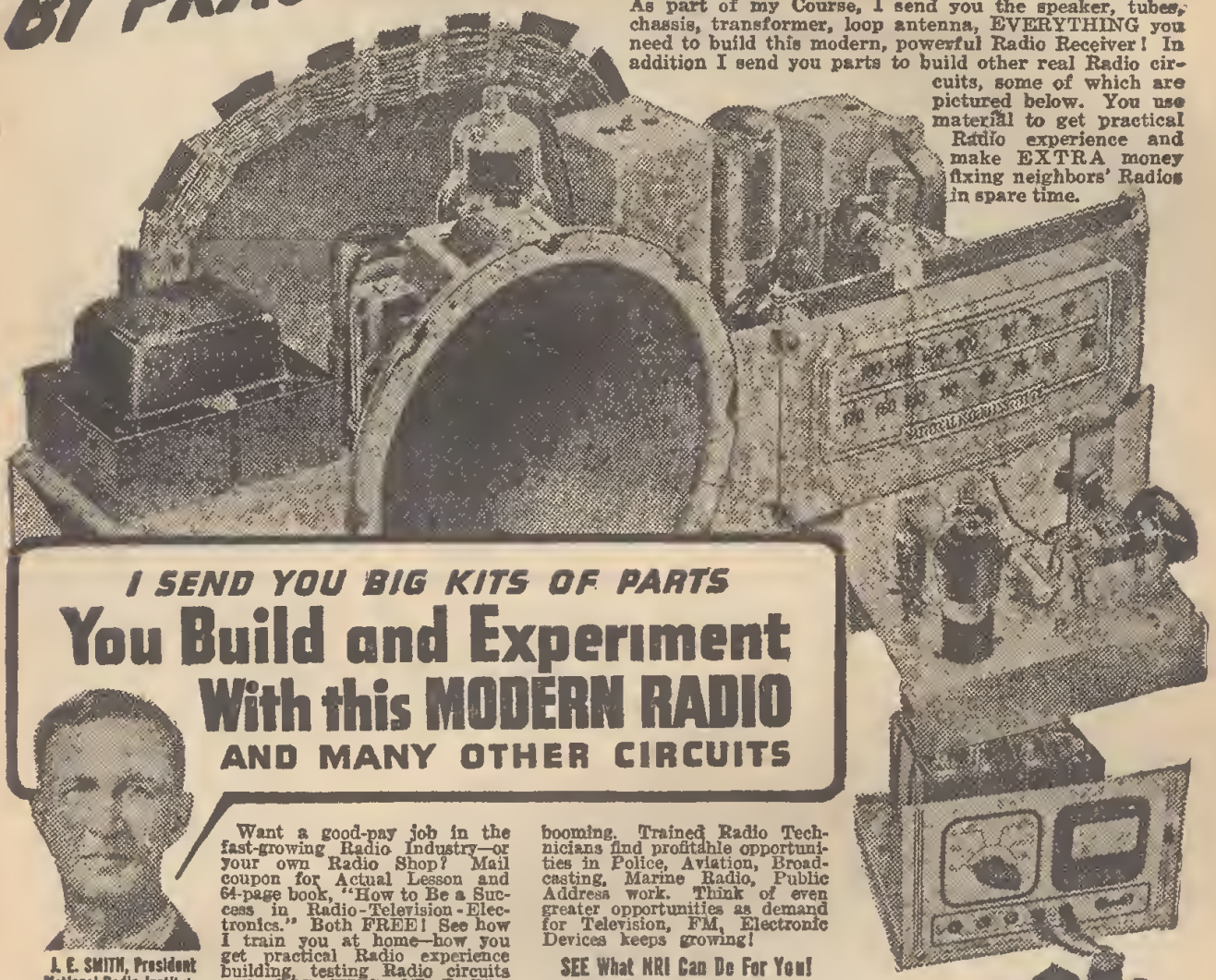

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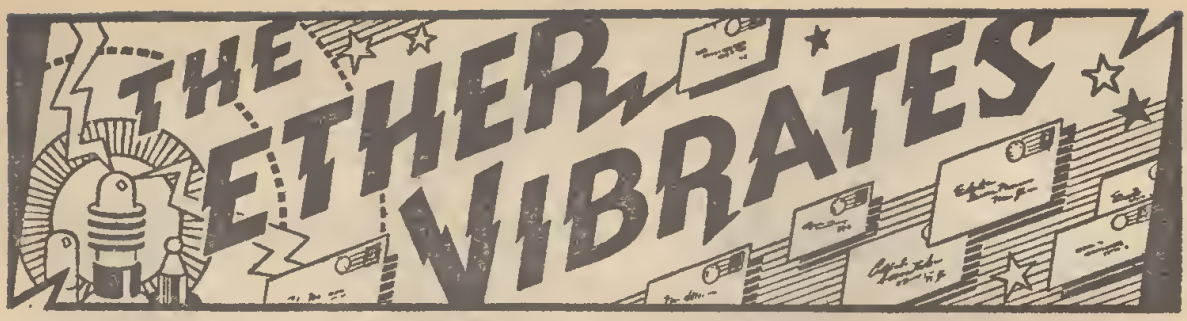

JUST one hundred and fifty-one years ago Thomas Robert Malthus, former ninth wrangler of Jesus College, Cambridge and former Curate of Albury, published a famous treatise upon the principle of population. From this was developed his still more famous *Essay on Population,* which forwarded the quite reasonable proposition that the future of mankind was sharply limited by the food raising capacity of the world.

It was Dr. Malthus' idea that while growth of population, unchecked, increased in geometrical ratio, agriculture increased in the vastly slower arithmetical ratio. Thus humanity was virtually foredoomed to starve itself to death.

All in all it was a sane if pessimistic forecast. But it is doubtful if, despite present starvation conditions in much of the world, any greater proportion of humanity is today going hungry than went without sufficient vitamins in Dr. Malthus' era. And this despite a trebling of population throughout the world.

Malthusians, as the Malthus followers are generally known, didn't know about a lot of things that were going to happen. There was the vast world colonization of the nineteenth century, for instance, to say nothing of modern agricultural machinery, which increased food production beyond all expectation. And another factor that spoiled the deal was the fact that humanity, by and large, cares too much for the full stomach to let itself starve for the sake of a theory, no matter how profound it may be.

Healthy Cynicism

What we are trying to get at is that theories, no matter how reasonable they may look and sound, are things to view with a healthy cynicism. The one big hitch in all of them is that they are propounded by humans —and no human yet lives who can foresee all influences operating on even the most minescular of apparent facts.

Charles Fort had this distrust of the pedantic to a marked degree—and whether one finds him nestor or nincompoop one must respect his almost virulent suspicion of established ideas. Inevitably, every formula for the future must succumb to the exigencies of the present of which it inevitably becomes a part. This goes for Marxists (those Canutist folk who seek to force humanity and history into line with the one-note philosophy of their single-Smith-Brother prophet) as well as Malthusians.

In the past the western world lived for some centuries with the Copernican theory —which had a dish-shaped Terra inhabiting the diametric center of the universe. You all know what happened to that one.

Gravitation Works

And when Isaac Newton was beaned by the apple he laid down the laws of attraction which we call gravitation. That one has stood up pretty well to date—chiefly because it worked. Currently scientific deep thinkers and others (notably Roger Babson, who is seeking nullification of the entire law) are digging or attempting to dig more deeply into the question of what enables Chinese, Australians and others to walk upside down without falling into space.

We would hate to bet that Sir Isaac's applefall theorem's days are unnumbered. Usually investigation brings new factors into the open which upset the best-laid theories. Result—a new set of rules which endure until a still newer set of principles are brought to bear upon it.

Mind you, without such "rules" it is doubtful if human thinking would have progressed at all. Each operates within the range of factors known to its evolvers, ultimately en-

(Continued on page 8)

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THE ETHER VIBRATES

(Continued from page 6)

abling them to rear upon it something more broadly gauged.

But no theory, during its period of use, deserves the worship accorded it by those unfortunate humans who like a tidy world of thought, with each and every idea neatly dovetailing into both its neighbors. It has its uses, yes. But it is dollars to the proverbial perforated crullers that it just ain't so.

Plenty of allegedly intelligent folk have fought and bled and died for the idea that a straight line is the shortest distance between two points—utterly forgetting that there simply cannot be a straight line that will cling to the surface of a sphere such as Earth.

Readers of science fiction are, for the most part, great theorists. They must be or they would not enjoy the speculative basis upon which all science fiction is reared. Occasionally, as this column has revealed in its letters from readers, they cling stubbornly to some pet formula until hit over the head so hard that they regretfully loosen their grip.

The idea that nothing is actually so in the realm of the mind seems to panic too many people. But nothing that they cling to can change the shiftiness of all human concepts. In so clinging they are playing Canute all by themselves with the tide of the imagination —and just as fruitlessly.

Once this concept is accepted it ceases to hold terror for anyone. Theories become the speculations they actually are and, by playing with them in proper perspective, the range of thinking is increased beyond all limits. Such freedom is the basis of all creative thought—and only in creation can any of us find lasting satisfaction.

Actually, of course, our theory that all theories are in themselves without reality is as fallacious as any other idea advanced by a member of the species jestingly referred to as *homo sapiens*. But we're trebly darned if we aren't going to cling to it anyway. So be it.

OUR NEXT ISSUE

ROD CANTRELL, whose trick of teleportation does considerable world-

(Continued on page 10)

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THE ETHER VIBRATES

(Continued from page 8)

saving in our current issue, emerges under the able guidance of author Murray Leinster as the chief figure in THE BLACK GALAXY, the complete novel which leads the story parade of STARTLING STORIES for March.

His other-world gadget has enabled him to become the pioneer interplanetary explorer of Earth and he is infuriated with a politics-ridden Space Project Committee. He and his secretary, pretty Pat Bowen, visit the *Stellaris*, first real space-ship, which Cantrell has been designing, before he is kicked upstairs to a desk job he doesn't want.

Construction is still going on and, through a worker's accident, the ship, still incomplete and utterly unarmed, is sent flashing into the "other" space, a universe of complete darkness, in which its hyper-drive operates.

Cantrell has been removed from his job as chief space-explorer because of his insistence, thanks to a booby-trapped pyramid of strange design he found on Calypso during one of his previous space-flights, that some intelligent species, hostile to all other space-travelers and their worlds, has long been roving the star lanes. At some time, perhaps a few thousand years ago, they have utterly wiped out an advanced Martian civilization and left the planet dead and gutted behind them.

The *Stellaris* and its passengers—hardly a crew in any sense of the word—are virtually a space-derelict and forced to rely upon their wits and ingenuity, as well as Cantrell's brilliant leadership. They are tracked down by the alien race, who travel in immense pyramids and are utterly foreign and vicious to all human concepts.

Before the final battle is fought amid the shining stars Cantrell and his little group have traveled through a journey that makes this novel one of the most scientifically ingenious as well as stirring science fiction stories ever to emerge from the Leinster typewriter. March means a big novel in SS.

Clifford D. Simak's fine novelet, THE LOOT OF TIME, is back for a Hall of Fame encore. This simply written, highly imaginative tale is one of the best space operas after the old school ever written. It tells of men of today who, in the first of all time ma-

(Continued on page 150)

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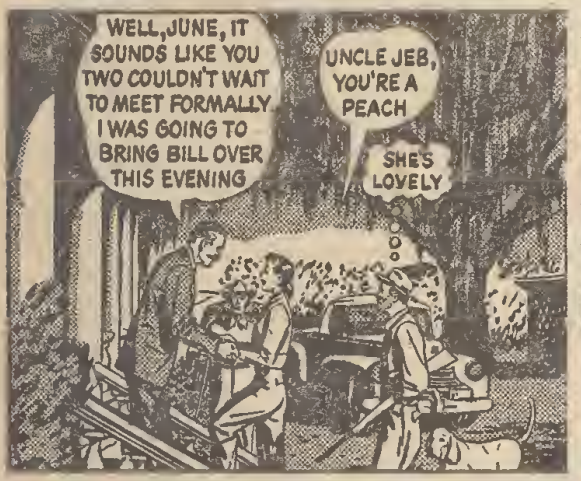
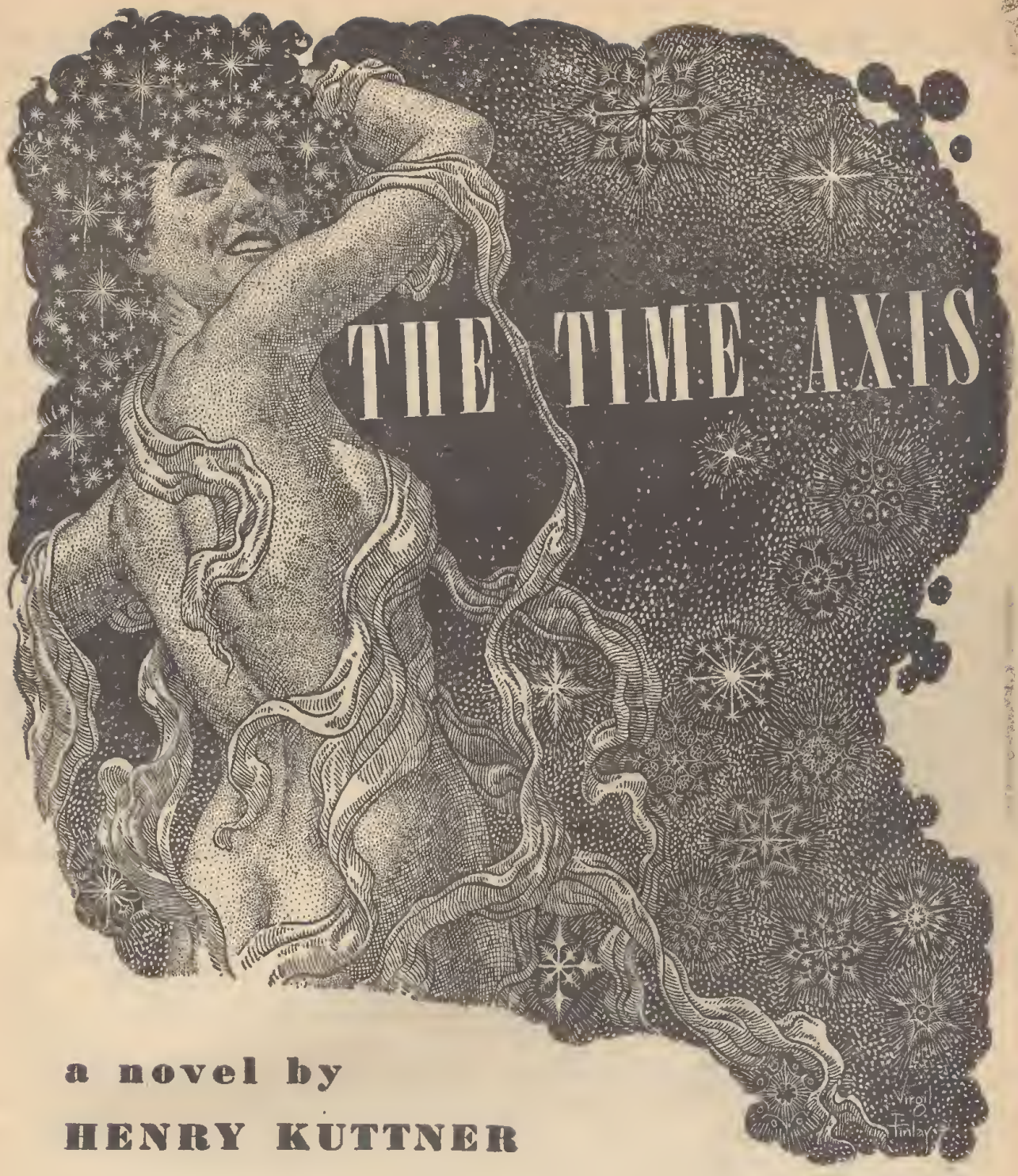
WILD TURKEY HUNTING IN A SOUTHERN NATIONAL FOREST CAN HARDLY BE CLASSED AS A DANGEROUS SPORT, BUT WHEN A WOUNDED WILD BOAR INTRUDES...





THE TIME AXIS

a novel by

HENRY KUTTNER

Rich man, scientist, soldier, scribe, are summoned to a far-distant future to save a galaxy from creeping death!

CHAPTER I

Encounter in Rio

THE whole thing never happened and I can prove it—now. But Ira De Kalb made me wait a billion years to write the story.

So we start with a paradox. But the strangest thing of all is that there are no real paradoxes involved, not one. This is a record of logic. Not human logic, of course, not the logic of this time or this space.

Through the Core of Time, a Strange Quartet

I don't know if men will ever journey again, as we journeyed, to that intersection of latitude and longitude where a shell hangs forever—forever and yet not forever, in space and out of space—on the axis stretching through time from beginning to end.

From the dawn of the nebulae to the twilight of absolute entropy, when the framework of the cosmos has broken down into chaos, still that axis will stretch from dawn to dusk, from beginning to end. For as this world spins on an axis through space, so the sphere of time spins on its own axis.

I never understood the ultimate answer. That was beyond me. It took the combined skills of three great civilizations far apart in time to frame that godlike concept in which the tangible universe itself was only a single factor.

And even then it was not enough. It took the Face of Ea—which I shall never be able to describe fully.

I saw it, though. I saw it, luminous in the reddish dusk, speaking to me silently above the winds that scour perpetually across the dead, empty lands of a day yet to come. I think it will stand there forever in an empty land on a dead planet, watching the endless night draw slowly on through days as long as years. The stars will stand and the Earth-nekropolis will stand and the Face will stand there forever. I was there. I saw it.

Was there? Will be? *May be?* I can't tell now.

But of all stories in the world, this more than any needs a pattern.

Since the beginning is in the past, before men as such existed at all, the only starting place I know is a temporal and personal one, when I was drawn into the experiment. Now that I know a little more about the nature of time it seems clearer to me that past, present and future were all stepping stones, arranged out of sequence. The first step took place two months ago.

That was here in this time and space. Or in the time and space that existed two months ago. There's been a change. . . .

* * * * *

NOW this is the way it used to be.

For me, the Big Ride. You start when you're born. You climb on the toboggan and then you're off. But you can only have the one ride. No use telling the ticket-taker you want to go again. They shovel you under at the end of the slope and there's a new lot of passengers waiting. You've had your three-score and ten. And it's over.

I'd ridden the toboggan for thirty-five years. Jeremy Cortland, Jerry Cortland of the Denver *Post,* the Frisco *Call-Bulletin, PM,* AP, *Time, Colliers*—sometimes staff, sometimes roving assignments. I leaned out of the toboggan and plucked fruit from the orchards as I sped by. Strange fruit, sometimes. Generic term is News. And that covers a lot of territory.

There was a splinter in the toboggan's seat. I had on red flannel underwear. I had a nervous tic. I couldn't sit still. I kept reaching out, grabbing. Years of it, of by-lines that said "cabled by Jeremy Cortland."

Russia, China, war coverage, Piccard's bathyscaphe, the supersonic and alto-stratosphere planes, the Russian earth-borer gadget, the Big Eye at Palomar—the coal strikes and the cracker lynchings and that dirt farmer in North Dakota who suddenly began to work miracles. (His patients didn't stay cured, you remember, and he disappeared.)

The Big Ride. In between I grabbed at other things. One marriage, one divorce. And more and more binges. Long bouts, between assignments. I didn't give a—well, you can't use that word in some papers. But it was all right. What did I expect, heaven?

The eyes aren't quite as clear as they used to be. The skin under them is a little puffy. One chin begins to be not quite enough. But it's still the Big Ride. With a splinter in the seat.

Dodging alimony payments, I skipped to Brazil, got in on a submarine exploration of the Amazon, wrote it up, sold it to AP as a feature. The first installment appeared on the same day as another little item—buried in the back—that said 85 and 87 had been made artificially.

Astatine and francium—the missing link in the periodic table—two billion years ago you could have picked up all the astatine and francium you wanted, just by reaching down and grabbing. If you'd been around at the time. Since then 85 and 87 have decayed

into other elements. But Seaborg and Ghiorso at UC made them synthetically, with the big cyclotron and atomic oven transmutation, and the column on one side of that trivial item said SECOND BURN-DEATH VICTIM FOUND, and on the other there was a crossword puzzle.

I didn't care, either.

Those deaths, by an indefinable sort of burning, were just starting to confound the United States authorities at the time. They hadn't yet spread to South America.

There was another item in that same paper that concerned me though I didn't know it at the time. It seemed that Ira De Kalb was working with Military Intelligence on some sort of highly secret project—so secret you could read all about it as far south as Rio if you had the price of the paper. I didn't care about that either—not then.

The brilliant neural webbing had simplified, and there was a pale glow hanging over the motionless figure (CHAP. XIX)

I had my own current problem. And it was a very odd one.

The thing started six weeks before it began. You'll have to get used to paradox—which isn't paradox once you grasp the idea.

It started in an alley in Rio, a little cobbled

tunnel opening off the Rua d'Ouvidor, and what I was doing there at three o'clock of a summer morning in January I'll never be able to tell you. I'd been drinking. Also I'd been playing *chemin de fer* and there was a thick pad of banknotes in the inside pocket of my white jacket, another stuffed into the dark wine-colored cummerbund I was wearing.

Looking down, I could see the toes of my shoes twinkling in the moonlight as I walked. The sky twinkled too, and the lights up in the hills and out on the bay. The world was a shiny place, revolving gently around me.

I was rich. But this time it was going to last. This time I'd cut out the binges and take a little house up in Petropolis, where it's cool, and I'd really get down to work on the analysis of news-coverage I'd been planning for so long. I'd made up my mind. I was drunk but I'd be sober again and the resolution would stay behind when the liquor died.

I don't often get these fits of decision but when they come they're valid enough and I knew this one was serious. That was a turning point in the career of Jerry Cortland, there in the moonlight on the checkered pavement.

What happened at the mouth of that alley I'll never really know. Fortunately for me I couldn't see or realize it clearly, being drunk.

It sprang from the deep shadow and put out two arms at me. That much I'm sure of. Two arms that never touched me. They never meant to. They shot past my ears, and I heard a thin hissing noise and something seemed to turn over in my mind, leisurely, like a deep-buried thought stirring to life. I could all but feel it move.

I touched it.

I wish I hadn't. But I was thinking of my money. My hand closed on the thing—on a part of it—no one will ever know on just what. I can only tell you it was smooth with a smoothness that burned my hand. Friction burned it, I think now. The sheer velocity of the thing, though it was not then moving perceptibly, took a neat thin layer of cuticle off my palm wherever it touched. I think it slid out of my grip on a thin lubrication of my own skin.

You know how it is when you touch something white-hot? For an instant it may feel cold. I didn't know I was burned. I closed my hand hard on the—on whatever it was I had hold of. And the very pressure of the grip seemed to push it away, out of my hand, very smooth and fast. All I know is that a moment later I stood there, shaking my hand because it stung and watching something dark in the moonlight vanish down the street with a motion that frightened me.

I was too dazed to shout. By the time my wits came back it had disappeared and the feeling of unreality it left behind made me doubt whether I had ever seen or felt it at all.

About ten minutes later I found my money was gone.

SO IT wasn't a turning point in my life, after all. If things had worked out any differently I never would have met Ira De Kalb. I never would have got myself mixed up in that series of deaths which so far as I was concerned were only signposts pointing the way to De Kalb. Maybe it was a turning point, at that.

The mind as well as the senses can be awfully slow sometimes. The hand doesn't know it has been burned, the mind can't recognize the impossible when it confronts it. There are many little refuges for a mind that must not admit to itself the impossible has happened.

I went back to my hotel that night and got into bed. I had met a thief, I told myself drowsily, as I'd deserved—walking a city street that late at night, loaded down with cash. I had it coming. He'd got my money and that was that. (He—it—hadn't touched the money, or me, except in that one brief unbalanced instant. The thing was impossible. But since it had happened, then it *was* possible and the mind could dismiss it.) I went to sleep.

And woke at dawn to the most extraordinary experience I'd ever had in my life, up to then. Even that encounter on the Rua d'Ouvidor hadn't been like this.

The experience was pure sensation. And the sensation was somewhere inside me, vaguely in the solar plexus region—a soundless explosion of pure energy like a dazzling sun coming into sudden, radiant being. There aren't any accurate words to tell about it.

But I was aware of ring after ring of glowing vitality bursting outward from that nova in the deepest nerve-center of my body. For a timeless instant I lay there, bathed in it, feeling it pour like a new kind of blood

through my veins. In that instant I knew what it was.

Then somebody turned off the power at its source.

I sat up abruptly, empty of the radiance, empty as if it had never happened, but filled terribly with the knowledge of what had caused it.

My head ached from the sudden motion. Dawn made the sky light outside and brimmed the room with a clear gray luminous pallor. I sat there holding my head in both hands and knowing—*knowing*—that somewhere in the city an instant ago a man had been killed.

There was no shadow of doubt in my mind. I was as sure as if I had had that strange sensation a hundred times before and each time seen a man die as it burst into a nova-glow inside me.

I wanted to go back to sleep and pretend it had been a dream. But I knew I couldn't. I dragged myself out of bed and into my clothes. I took my aching head and jangled nerves down into the street and found a yawning taxi-driver.

You see, I even knew where the dead man would be found. It was unthinkable that I should go there looking for him—but I went. And I found him. He was lying huddled against the rim of a fountain in a little square not far from the place where I'd last seen my—my thief—of the night before vanishing with that disquieting, smooth swiftness in the moonlight.

The dead man was an Indian, probably a beggar. I stood there in the deserted square, looking down at him, hearing the early morning traffic moving noisily past, knowing someone would find us here together at any moment. I had never seen a victim of the burn-death before but I knew I looked at one now. It wasn't a real burn, properly speaking. Friction, I thought, had done it. The eroded skin made me think of something, and I looked at my own palm.

I was standing there, staring from my burned hand to the dead man and then back again, when—it happened again.

The bursting nova of pure radiance flared into violence somewhere near the pit of my stomach. Vitality poured through my veins. . . .

I sold the series to AP as usual. There had been five of the murders in Rio before I got my idea about putting an end to them and by then the stories had begun to hit the States papers, some of them running my picture along with the sensational stuff about the deaths, and my uncanny ability at locating the bodies.

Looking back now, I suppose the only reason they didn't arrest me for murder was that they couldn't figure out how I'd done it. Luckily my hand had healed before the police and the papers began to connect me so tightly with the deaths.

After the fifth murder I got a reservation for New York. I had come to the conclusion that if I left Rio the murders would stop—in Rio. I thought they might begin again in New York. I had to find out, you see. By then I was in pretty bad shape, for the best of reasons—or the worst. Anyhow, I went back.

CHAPTER II

The Stain and the Stone

THERE was a message waiting for me at the airport. Robert J. Allister wanted to see me. I felt impressed. Allister runs a chain of news and picture magazines second only to *Life* and *Time*.

I phoned for an appointment, and they told me to come right up. I walked through a waiting-room full of people with prior appointments and they passed me right into the sanctum, with no preliminaries. I began to wonder if I'd been underestimating my own importance all these years.

Allister himself rose behind his desk and offered me his hand. I waded forward, ankle-deep through Persian carpets, and took it. He told me to sit down. His voice was tired and he looked thinner and more haggard than his pictures.

"So you're Jerry Cortland," he said. "Been following your Rio stuff. Nice work. Care to drop it for awhile?"

I gaped. He gave me a tired grin.

"I'd like you to work for me on contract," he said. "Let me explain. You know Ira De Kalb?"

"The poor man's Einstein?"

"In a way, maybe. He's a dilettante. He's a genius, really, I suppose. A mind like a grasshopper. He'll work out a whole new concept of mathematics and never bother to apply it. He—well, you'll understand better

after you've met him. He's onto something very new, just now. Something very important. I want some pieces written on it and De Kalb made a point of asking for you."

"But why?"

"He has his reasons. He'll explain to you—maybe. I can't." He pushed the contract toward me. "How about it?"

"Well—" I hesitated. My ex-wife had just slapped another summons on me, alimony again, and I could certainly use some money. "I'll try it," I said. "But I'm irresponsible. Maybe I won't stick to it."

"You'll stick," Allister said grimly, "once you've talked to De Kalb. That I can guarantee. Sign here."

De Kalb's house blended into the hillside as if Frank Lloyd Wright had built it with his own hands. I was out of breath by the time I got to the top of the gray stone terraces linked together by gray stone steps. A maid let me in and showed me to a room where I could wait.

"Mr. De Kalb is expecting you," she said. "He'll be back in about ten minutes."

Half the room was glass, looking out upon miles and miles of Appalachians, tumbled brown and green, with a dazzling sky above. There was somebody already there, apparently waiting too. I saw the outlines of a woman's spare, straight figure rising almost apologetically from a desk as I entered. I knew her by that air of faint apology no less than by her outline against the light.

"Dr. Essen!" I said. And I was aware then of my first feeling of respect for this job, whatever it was. You don't get two people like Letta Essen and Ira De Kalb under the same roof for anything trivial.

I knew Dr. Essen. I'd interviewed her twice, right after Hiroshima, about the work she'd done with Meitner and Frisch in establishing the nuclear liquid-drop concept of atomic fission. I wanted very much to ask her what she was doing here but I didn't. I knew I'd get more out of her if I let it come her way.

"Mr. De Kalb asked me to meet you, Mr. Cortland," she said in her pleasant soft voice. "Hello, It's nice to see you again. You've been having quite a time in Rio, haven't you?"

"Old stuff now," I said. "This looks promising, if you're in on it. What's up, anyhow?"

She gave me that shy smile again. She had a tired gentle face, gray curls cut very short, gray eyes like two flashes of light off a steel beam when she let you meet her direct gaze. Mostly she was too shy. But when you caught that rare quick glance of hers it was almost frightening. You realized then the hard dazzling mind behind the eyes.

"I'll let Mr. De Kalb tell you all about that," she said. "It isn't my secret. But you're involved more than you know. In fact—" She paused, not looking at me, but giving the corner of the carpet a gentle scowl. "In fact, I'd like to show you something. We've got a little time to spare, and I want your reaction to—to something. Come with me and we'll see."

I followed her out into the hall, down a flight of steps and then into a big room, comfortably furnished. A study, I thought. But the bookshelves were empty now and everything was lightly filmed with dust.

"The fireplace, Mr. Cortland," Dr. Essen said, pointing.

IT WAS an ordinary fireplace, gray stone in the pine-panelled wall, with a gray stone hearth. But there seemed to be a stain at one spot on the hearth, close to the wall. I stepped closer. Then I knelt to look.

The speed of a chain of thoughts comes as close as anything I know to annihilating time itself. The images that flashed through my mind seemed to come all at once.

I saw the stain. I thought—*transmutation.* There was no overt reason but I thought it. And then before I could take it in clearly with my conscious mind, in the chambers of the unconscious I was standing again at the alley mouth in Rio at three in the morning, seeing a dark thing leap forward at me with its two hands outstretched.

I heard the thin humming in my ears, felt the burning of its touch. I remembered the sunburst of violent energy deep inside me that had heralded murder whenever it came. And I knew that all these were one—all these and the stain upon the hearth. The knowledge came unbidden, without reason. But it was sure.

I didn't question it. But I looked very closely at the stone. That stain was an irregular area where the stone seemed changed into another substance. I didn't know what the substance was. It looked wholly unfamiliar. The gray of the hearth stopped abruptly, along an irregular pattern, and gave place to a substance that seemed

translucent, shot through with veins and striae that were lighter, like the veins in marble.

The pine panels beside the fireplace were partly stained like the stone and a little area of the carpet that came up to the edge of the hearth. Wood, stone and cloth alike had turned into this—this marble stain. The veins in it were like tangled hair, curling together, embedded like some strange neural structure in half-transparent flesh.

I looked up.

"Don't touch it," Dr. Essen said quickly.

I didn't mean to. I didn't need to. I knew what it would feel like. I knew that though it was perfectly motionless it would burn my hand with friction if I touched it. Dr. Essen knew too. I saw that in her face.

I stood up. "What is it?" I asked, my voice sounding oddly thin.

"The nekron," she told me, almost absently. She was searching my face and the keenness of her gaze was almost painful to meet. "That's Mr. De Kalb's word for it. As good a word as any. It's—a new type of matter. Mr. Cortland—you have seen something like this before?" Her rare, direct look was like the sharpness of a knife going through me, cold and deep.

"Maybe," I said. "No, never, really. But—"

"All right, I understand," She nodded. "I wanted to verify something. I've verified it. Thank you." She turned away toward the door. "We'd better get back. No, please—no questions yet. I can't possibly explain until after you've seen the Record."

"The Record? What—"

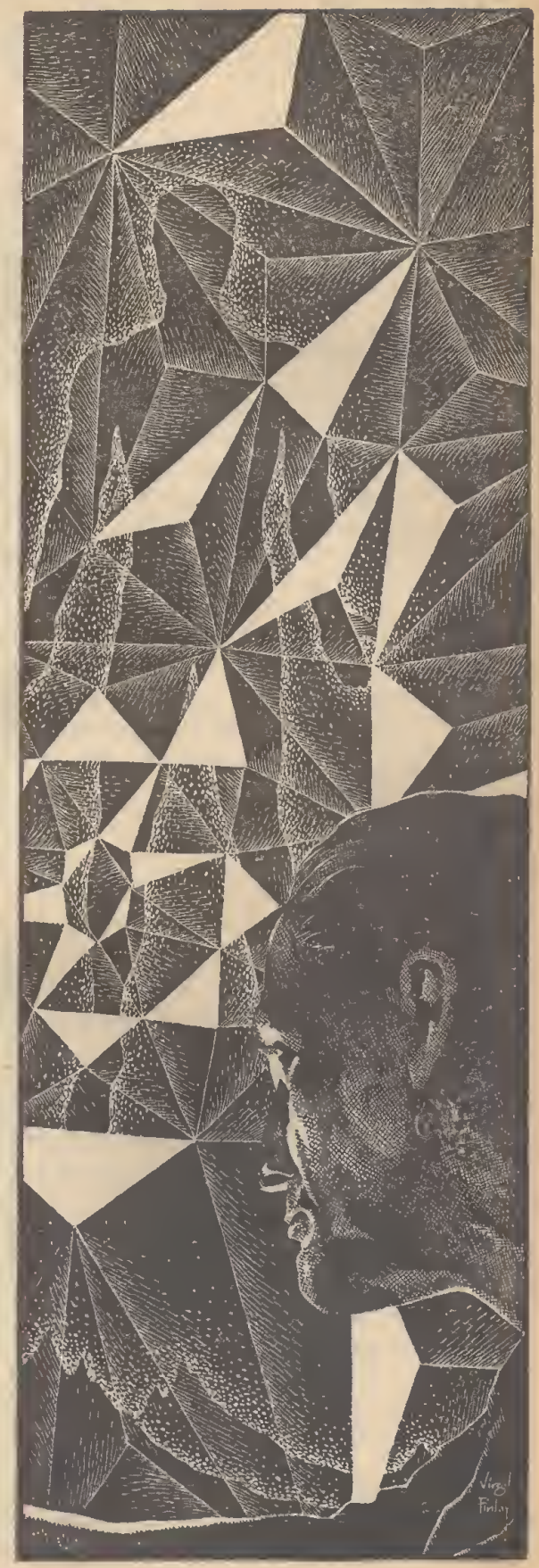
"It's something that was dug up in Crete. It's—peculiar. But thoroughly convincing. You'll see it soon. Shall we go back?"

She locked the door behind us.

Certainly De Kalb didn't look his forty-seven years any more than a Greek statue does. He looked like a young man, big and well proportioned. His sleek hair lay flat and short upon his head, and his face was handsome in the vacant way the Belvedere's is.

There was no latent expression upon it and you felt that no emotions had ever drawn lines about the mouth or between the brows. Either he had never felt any or his control was such that he could suppress all feeling. There was the same placidity you see in the face of Buddha.

There was something odd about his eyes



The box opened like a flower that had as many facets as a jewel (CHAP. II)

—I couldn't make out their color. They seemed to be filmed as though with a cat's third eyelid. Light blue, I thought, or gray, and curiously dull.

HE GAVE me a strong handshake and collapsed into an overstuffed chair, hoisted his feet to a hassock. Grunting, he blinked at me with his dull stare. There was a curious clumsiness to his motions, and when he spoke, a curious ponderous quality in his diction. He seemed to feel something like indulgent contempt for the rest of the world. It was all right, I suppose. Nobody had better reason. The man was a genius.

"Glad you're here, Mr. Cortland," he said hoarsely. "I need you. Not for your intelligence, which is slight. Not for your physical abilities, obviously sapped by years of wasteful and juvenile dissipation. But I have an excellent reason to think we may work well together."

"I was sent to get an interview for *Spread,*" I told him.

"You were not." De Kalb raised a forefinger. "You err through ignorance, sir. Robert Allister, the publisher of *Spread,* is a friend of mine. He has money. He has agreed to do the world and me a service. You are under contract to him, so you do as he says. He says you will work with me. Is that clear?"

"Lucid," I told him. "Except I don't work that way. The contract says I'm to handle news assignments. I read the fine print too. There was no mention of peonage."

"This is a news assignment. I shall give you an interview. But first, the Record. I see no point in futile discussion. Dr. Essen, will you be kind enough—" He nodded toward a cupboard.

She got out a parcel wrapped in cloth, handed it to De Kalb. He held it on his knee, unopened, tapped his fingers on its top. It was about the size and shape of a portable typewriter case.

"I have showed the contents of this," he said, "only to Dr. Essen. And—"

"I am convinced," Dr. Essen said dryly. "Oh yes, Ira. I am convinced!"

"Now I show it to you," De Kalb said and held out the package. "Put it on the table—so. Now draw up a chair. Remove the wrappings. Excellent. And now—"

They were both leaning forward, watching me expectantly. I glanced from them to the battered box, then back again. It was a tarnished blue-white rectangle, battered, smudged with dirt, perfectly plain.

"It is of no known metal," De Kalb said. "Some alloy, I think. It was found fifteen years ago in an excavation in Crete and sent to me unopened. Not intentionally. Nobody has ever been able to open it until recently. It is, as you may have guessed, a puzzle box. It took me fourteen years to learn the trick that would unlock it. It is also apparently indestructible. I shall now perform the trick for you."

His hands moved upon the battered surface. I saw his nails whiten now and then as he put pressure on it.

"Now," he said. "It opens. But I shall not watch. Letta, will you? No, I think it will be better for us both if we look away while Mr. Cortland—"

I stopped listening along about then. For the box was slowly opening.

It opened like a jewel. Or like an unfolding flower that had as many facets as a jewel. I had expected a lid to lift but nothing of the sort happened. There was movement. There were facets and planes sliding and shifting and turning as though hinged, but what had seemed to be a box changed and reassembled and unfolded before me until it was—what? As much as jewel as anything. Angles, planes, a shape and a shining.

Simultaneously there was motion in my own mind. As a tuning fork responds to a struck note, so something like a vibration bridged the gap between the box and my brain. As a book opens, as leaves turn, a book opened and leaves turned in my mind.

All time compressed itself into that blinding second. There was a shifting reorientation, motions infinitely fast that fitted and meshed with such precision the book and my mind were one.

The Record opened itself inside my brain. Complete, whole, a history and a vision, it hung for that one instant lucid and detailed in my mind. And for that moment outside time I *did* comprehend. But the mind could not retain it all. It flashed out and burned along my nerves and then it faded and was only a pulse, a glimpse, hanging on like an after-image in my memory. I had seen—and forgotten.

But I had not forgotten everything.

Across a gulf of inconceivable eons a Face looked at me from red sky and empty earth. The Face of Ea. . . .

The room spun around me.

"Here," Dr. Essen's voice murmured at my shoulder. I looked up dizzily, took the glass of brandy she offered. I'm not sure now whether or not I had a moment of unconsciousness. I know my eyes blurred and the room tilted before me. I drank the brandy gratefully.

CHAPTER III

The Vision of Time

DE KALB said, "Tell us what you saw."

"You—you've seen it too?" The brandy helped but I wasn't yet steady. I didn't want to talk about what had flashed through my mind in that unending, dissolving glimpse which was slipping fragment by fragment out of my memory as I sat there. And yet I *did* want to talk.

"I've seen it." De Kalb's ponderous nod was grim. "Letta Essen has seen it. Now you. Three of us. We all get the same thing and yet—details differ. Three witnesses to the same scene tell three different stories. Each sees with a different brain. Tell us how it seemed to you."

I swirled the brandy around in my glass. My thoughts swirled with it, hot and potent as the liquor and as volatile. Give me ten minutes more, I thought, and they'll evaporate.

"Red sky," I said slowly. "Empty landscape. And—" The word stuck in my throat. I couldn't name it.

"The Face," De Kalb supplied impatiently. "Yes, I know. Go on."

"The Face of Ea," I said. "How do I know its name? Ea and time—*time*—" Suddenly the brandy splashed across my hand. I was shaking with reaction so violent I could not control it and I was shaking because of *time*. I got the glass to my lips, using both hands, and drained what was left.

The second reaction passed and I thought I had myself under control.

"Time," I said deliberately, letting the thought of it pour through my mind in a long, cold, dark-colored tide that had no motion. Time hasn't, of course. But when you see it as I did, at first the concept makes the brain rock in your skull.

"Time—ahead of our time. Uncountable thousands of years in our future. It was all there, wasn't it? The civilizations rising and falling one after another until—the last city of all. The City of the Face."

"You saw it was a city?" De Kalb leaned forward quickly. "That's good. That's very good. It took me three times to find that out."

"I didn't *see* it. I—I just knew."

I closed my eyes. Before me the empty landscape floated, dark, almost night, under the dim red sky.

I knew the Face was enormous. The side of some mountain had been carved away to reveal it and, I supposed, carved with tools by human hands. But you had the feeling that the Face must always have been there, that one day it had wakened in the rock and given one great grimace of impatience and the mountainside had sloughed away from its features, leaving Ea to look out into eternity over the red night of the world.

"There are people inside," I said. "I could feel them, being there. Feel their thoughts, I suppose. People in an enormous city, a metropolis behind the Face."

"Not a metropolis," De Kalb said. "A nekropolis. There's a difference. But—yes, it's a city."

"Streets," I said dreamily, sniffing the empty glass. "Levels of homes and public buildings. People moving, living, thinking. What do you mean, nekropolis?"

"Tell you later. Go on."

"I wish I could. It's fading." I closed my eyes again, thinking of the Face. I had to force my mind to turn around in its tracks and look, for it didn't want to confront that infinite complexity again. The Face was painful to see. It was too intricate, too involved with emotions complex beyond our grasp. It was painful for the mind to think of it, straining to understand the inscrutable things that experience had etched upon those mountain-high features.

"Is it a portrait?" I asked suddenly. "Or a composite? What *is* the Face?"

"A city," De Kalb said. "A nation. The ultimate in human destiny—and a call for help. And much more that we'll never understand."

"But—the future!" I said. "That box—didn't you say it was found in Crete? Dug up in old ruins? How could something from the past be a record of our own future? It

doesn't make sense."

"Very little makes sense, sir, when you come to examine the nature of time." De Kalb's voice was ponderous again. He heaved himself up a little and folded his thick fingers, looking at me above them with veiled gray eyes.

"Have you read Spengler, Mr. Cortland?" he asked.

I grimaced and nodded.

"I know, I know. He has a high irritant value. But the man had genius, just the same. His concept of the community, moving through its course from 'culture' to dead and petrifying 'civilization' is what happened to the city of the Face.

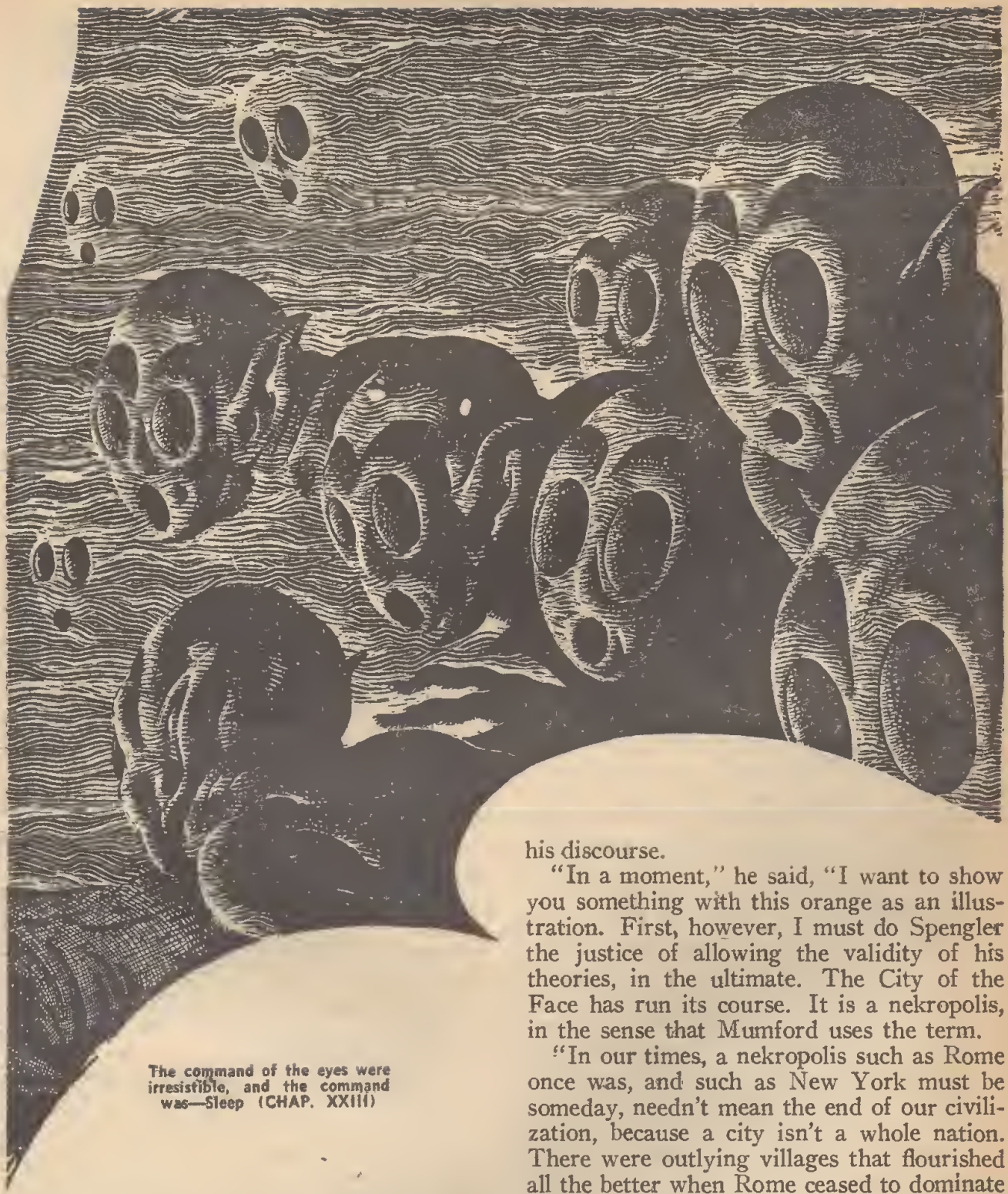
"I said 'happened' because I have to use the past tense for that nekropolis of the future. It exists. It has accomplished itself in time as fully as Babylon or Rome. And the men in it are not men at all in the sense we know. They are gods."

HE LOOKED at me as if he expected me to object. I said nothing.

"They are gods," he went on. "Spengler was wrong, of course, in thinking of any human progress in one simple, romantic curve. You have only to compare fourteenth century Rome with sixteenth century Rome to see that a nekropolis, as Mumford calls it, can pull itself together and become a metropolis again, a living, vital unit in human culture.

"I have no quarrel with Spengler in his

Perhaps it was a dream in which the waters of time parted above us



The command of the eyes were irresistible, and the command was—Sleep (CHAP. XXIII)

interpretations of a culture within itself. But both he and Toynbee went astray in their ideas of the symbolic value of a city. When you go further into the Record you'll see what I mean."

He paused, put out a large hand and fumbled in a dish of fruit on the table at his elbow. He found an orange and peered at it dubiously, hefted it once or twice, then closed his fingers over it and went on with his discourse.

"In a moment," he said, "I want to show you something with this orange as an illustration. First, however, I must do Spengler the justice of allowing the validity of his theories, in the ultimate. The City of the Face has run its course. It is a nekropolis, in the sense that Mumford uses the term.

"In our times, a nekropolis such as Rome once was, and such as New York must be someday, needn't mean the end of our civilization, because a city isn't a whole nation. There were outlying villages that flourished all the better when Rome ceased to dominate their world. When the dark ages closed over Europe it wasn't by any means the end of the civilized world—elsewhere on the planet new cultures were rising and old ones flourishing.

"But the City of the Face is a very different matter.

"That City is really Nekropolis and there are no outlying villages to carry on, no outlying cultures rising toward fruition. In all

that world there is only the one great City where mankind survives. And they aren't men—they are gods. Gods, sir!"

"Then it can't really be a nekropolis," I objected.

"It need not be. That's up to us."

"How?"

"You saw my hearth. Dr. Essen showed you the stain of plague that is creeping across it. Oh yes, my friend, that stain is spreading! Slowly, but with a rate of growth that increases as it goes. The negative matter—no, not even negative. Not even that. But it happened to the world of the Face. That whole planet is nekronic matter except for the City itself.

"You didn't sense that from your first experience with the Record? No? You will. The people in the City can't save themselves by direct action on the world around them. They appeal to us. We *can* save them. I don't yet know how. But they know or they wouldn't have appealed in just the way they did."

"Wait a minute," I said. "Let me get this straight. You're asking me to accept a lot, you know. The only premise I've *got* to believe in is the—the Record. But what do you want from me, personally? How do I come into it? Why *me?*"

DE KALB shifted in his chair, sighed heavily, opened his fingers and peered at the orange he held as if he had never seen it before. He grimaced.

"Sir, you're right. I accept the rebuke. Let me give you facts. *Item,* the Record. It is, in effect, a book. But not a book made by human minds. And it must, as you know, be *experienced,* not read. Each time you open the box you will get the same flash of complete vision, and each time you will forget a little less as your mind is conditioned. But there will always be facets of that tremendous story which will elude us, I think. Our minds can never wholly grasp what lies inside that box. . . .

"It was found in Crete. It had lain there perhaps three thousand years, perhaps five thousand—I think, myself, a million. It came into my hands half by accident. I could not open it. Off and on I tried. That is my habit. I used X-rays to look through the substance of the box. Of course I saw nothing.

"I detected radioactivity, and I tested it with certain of the radio-elements. I exposed it to supersonics. I—well, I tried many things. Something worked. Something clicked the safety, so that one day it opened. You see—" He looked at me gravely. "You see, it was time."

"Time?"

"That box was made with a purpose, obviously. It was sent to us, with a message. I say *to us* but the aim was less direct. It was sent through time, Mr. Cortland—through time itself—and the address said simply, 'To be opened only by a skilled technological civilization.' "

"All right," I said. "Suppose it came through time. Suppose it's an appeal for help. I didn't get that, but I'm willing to believe I might if I opened the box often enough. But why do you assume this is a living issue, here and now? You imply the fate of the City depends on us. If that box is as old as you say, isn't it more likely the City of the Face existed somewhere in the prehistoric past?

"They made a record—I can't deny that. They cast it adrift in time like a note in a bottle and it floated ashore here and we read it. Sure. But it makes a good enough news-story for me the logical way—a relic of a dead civilization a million years old. That I could write. But—"

"You are not here to write a news story, sir!" De Kalb's voice was sharp.

"That's what my contract says I'm here for."

"You were chosen," De Kalb said heavily. "You were chosen. Not by Allister. Not by me." He shifted uneasily. "Let me go on a little." He peered at the orange, tossed it up and caught it with a smack in his palm. "I opened the box for the first time," he said, "in my studio.

"You've seen it. I saw the box unfolding like a flower. For the first time in a million years—opening up in four dimensions, or perhaps more than four, with that tesseract motion which the eye can only partly see. But that first time, sir—something more happened." He paused, hesitated, said in a reluctant voice, "Something came out of the box."

I waited. Dr. Essen, who had scarcely moved since this talk began, got up abruptly and went to stand at the window, her back to us, looking out over the great brown tumble of mountains beyond.

"It came out of the box," De Kalb said in a rapid voice, as if he didn't want to talk

about this and was determined to get it over as fast as he could. "It passed me. It leaped toward the fireplace. And it was gone. When I looked, I saw nothing. But that evening I noticed the first spot of the stain upon the stone. *In* the stone. It meant little to me then—I had not yet learned enough from the Record to be afraid. But I know now."

CHAPTER IV

The Laurentian Story

AGAIN I waited. This time I had to prompt him.

"Know what?"

"The nekron," he said. "It's growing. It will never stop growing, until—" He paused, shrugged. "We have to believe they're in the future," he said. "We *have* to help them. They made sure of that. For unless we do the nekron will grow and grow until our world is like theirs—dead matter. Inert. Nekronic. I call it that because it is death.

"An absolutely new form of matter, the death of energy. It breaks a supreme law of our universe, the law of increasing entropy. Entropy trends toward chaos, naturally. But the nekron is the other extreme, a pattern, a dead null-energy pattern of negation."

"You mean," I demanded, "that the people of the City deliberately set a trap for the man who first opened the box?"

"They had to. They had to make sure we'd answer their appeal to save ourselves."

"Then you're convinced they exist in the future, not the past?"

"You saw the Face. You were aware, you say, of the waves of civilization rising and falling between our time and theirs? How can you doubt it, then, Mr. Cortland?"

I was silent, remembering.

"It doesn't matter," De Kalb went on. "That question is purely academic. Past or future is all one in the time-fabric you will understand better after you've opened the box again."

"But," I said, "how *can* we help them? If they can't destroy the menace to their own world, whatever it is, how could we? It's ridiculous. And anyhow, if time-travel was possible for the box—which I don't for a moment really accept—how could it be possible for tangible, living men from our time? And if it were, how could you be sure you weren't dashing off to save a city that would prove when you found it to be already dead? Overwhelmed a million years ago? How is it—"

"No, no, Mr. Cortland!" De Kalb held up a large hand with an orange balanced on its palm. "You have so much to learn! Allow me the intelligence to think of those objections myself! Surely you don't imagine all that hadn't occurred to me already?

"The answer is that the nekron *can* be destroyed—or at least that the problem it poses can be solved. I believe it can be solved only by this method—three men and one woman must go into the future age that hold the Face of Ea. For that, apparently, was the original plan of the people of the Face."

"What makes you so certain of that?"

"A number of factors. The Record *was* sent to our civilization, remember?"

I had him there. "But it was found in Cretan ruins, you said."

"Certainly. And the ancient Minoans didn't open it. I suspect the Record existed long before the time of Theseus—but it remained unopened until a neotechnical civilization had developed on this planet. Only men—and women—who were products of such a culture would have the qualities necessary to solve the nekronic problem."

"Why didn't they send the Record directly to our era? Why did they miss the right time by thousands of years?"

"I am no expert in the specialized restrictions of time-traveling," De Kalb said, with some irritation. "It may be that too-accurate aim is impossible. How can I tell that? The Record reached the right hands. I can easily prove that."

BUT I was searching for errata. "You said we'd have the qualities that could solve the nekronic problem—destroy it, I suppose you mean. Well? *Have* you solved it?"

De Kalb lost his ill-temper and beamed at me. "No," he said. "Not yet. The nekronic matter itself is very curious—atypical, completely. It is absolutely non-reactive. It has no spectrum. It emits no energy. No known reagent affects it in the slightest degree. It is a new type of matter,

plain and simple. I cannot destroy it—not yet. Not now. But I believe I can do it with the guidance and aid of the people of the Face. As a matter of—"

The telephone on the table beside him buzzed sharply. Dr. Essen swung around with a start. De Kalb grunted, nodded at her, muttered, "I'm afraid so," as if in answer to a question and took up the telephone with his free hand.

It sputtered at him.

"All right, put him on," De Kalb said in a resigned voice. The receiver buzzed and sputtered again. De Kalb's placid features grimaced, smoothed out, grimaced again. "Now Murray," he said. "Now, Murray—no, wait a minute! Confound it, Murray, allow me to—I know you are, but—"

The telephone would not let him speak. It crackled angrily, a word now and then coming out clearly. De Kalb listened in resigned silence. Finally he heaved himself up in the chair and spoke with sudden resolution.

"Murray," he said sharply, "Murray, listen to me. Cortland's here."

The phone crackled. De Kalb grinned. "I know you don't," he said. "Probably Cortland doesn't like you either. That's not important. Murray, can you come up here? Yes, it *is* important. I have something to show you." He hesitated, glanced at Dr. Essen, shrugged. "I am casting the die, Murray," he said. "I want to show you a certain box."

"You know Colonel Harrison Murray?" De Kalb asked. I nodded. I knew and disliked him for personal qualities quite apart from his ability. He was old army, West Point, a martinet. He had the violent, uncontrolled emotions of an hysterical woman and the mechanical brilliance of a—well, a robot.

No one could deny his genius. He prided himself on being scrupulously just, which he wasn't. But he thought he was. A fine technician, a genius at strategy and tactics. He confirmed that in the Pacific, back in '45. I'd done a profile on him once and he hadn't liked it at all.

"You're taking him in on this?" I asked.

"I've got to. He can make it too hot for me unless he understands. You see, I've been working with him on—never mind. But he insists I go on with it. He can't see how important this new business is."

"Ira," Dr. Essen put in timidly. "Ira, do you really think it's wise? To bring the colonel in yet, I mean. Are you *sure?*"

"You know I'm not, Letta." He frowned. "But there's so little time to be lost, now. I don't dare wait any longer. Mr. Cortland—" He swung around toward me— "Mr. Cortland, I see it is now time to give you one more bit of knowledge. I have a story to tell you, about myself and you. Surely you must have realized by now that you are involved in this thing far beyond any power of mine to accept or dismiss."

I NODDED. I did know that. I thought briefly of the things that had happened to me in Rio, of the affinity I had sensed without understanding between that stain on the hearthstone and the—the creature which had scorched my hand in Rio and the deaths that had come after. Would they stop now—in Rio? Would they begin again, nearer home? There had to be some connection—coincidence just doesn't stretch that far. But all I could do was wait.

"This is my story," De Kalb said. "Our story, Mr. Cortland. Yours and mine, Dr. Essen's—perhaps Colonel Murray's too. I don't know. I wish I did. Well, I'll get on with it." He sighed heavily. "After I had experienced the Record many times," he said, "I began to realize that there was in it reference to a certain spot on the earth's surface that had a rather mystifying importance.

"I was unable to grasp why. The place was localized by latitude, longitude, various methods of cross-reference. It took me a long while to work it out in terms of our own world and era and decimal system. But finally I did it.

"I went there." He paused, regarding me gravely. "Have you ever been in the Laurentians, Mr. Cortland? Do you know the wildness of those mountains? So near here by air, and so far off in another world, once you arrive and the sound of your motor ceases. You imagine then that you can hear the silences of the arctic wastes, which are all that lie beyond that band of northern forests.

"Well, I hired men. I sank a shaft. They thought I was simply a prospector with more money and fewer brains than most. Fortunately they didn't know my real reason—that the spot I was hunting had turned out to be underground. You get some curious superstitions up there in the wilds—perhaps

not curious. In many ways they're wise men. But my spot, in this era at least, had to be dug for.

"My instruments showed me a disturbance toward which the shaft was angled. And eventually we came to the source of that disturbance. We found it. We hollowed a cavern around it. After that I dismissed the men and settled down to study the thing I had found." He laughed abruptly.

"It was twenty feet of nothing, Mr. Cortland. An oval of disturbance, egg-shaped, cloudy to the eye. I could walk through it. But inside that oval space and matter were walled off from our own space and matter by a barrier that was, I know now, supra-dimensional. A man may move from light to dark, encountering no barrier—yet the difference is manifest. There were tremendous differences here.

"Also there was something inside. I was convinced of that long before I got my first glimpse of it. I tried many things. It was finally under a bombardment of UV that I saw the first shadowy shape inside that nothingness. I increased the power, I decreased it, I played with the vernier like a violinist on a Stradivarius.

"I chased that elusive mystery up and down through the light bands like a cat on a mouse's trail. And at last, quite clearly, I saw—" He broke off, grinning at me.

"No, I shall not tell you yet what I saw," he said. "You wouldn't believe me. The moment has now come, Mr. Cortland, when I must give you a little lesson on the nature of time." He held up the orange, revolving it slowly between his fingers.

"A sphere," he said, "revolving on an axis. Call it the earth."

He put out his other hand and took up from the fruit bowl a silver knife with a leaf-shaped blade a little broader than the orange. With great deliberation he slid the edge through the rind.

CHAPTER V

The Death Carriers

WHAT happened then came totally without warning. In one moment I sat comfortably in my chair watching De Kalb draw the knife-blade through the orange. In the next—

A blinding nova of pure energy exploded outward from a nexus in the center of my body.

The room ceased to be. De Kalb and Dr. Essen were unrealities far off at the periphery of that exploding nova. Vitality ran like fire through every nerve and vein, like an adrenaline charge inconceivably magnified. There was nothing in the world for one timeless moment but the bursting glow of that experience for which I have no name.

The first thing I saw when the room came back into focus around me was the blood running from De Kalb's hand.

It meant nothing to me, in that first instant. Blood is the natural noncomitant of death and I knew that somewhere not far away a man had died a moment before. Then my senses came back and I sat up abruptly, staring at DeKalb's face.

The color had drained out of it. He was looking at his cut hand with a blank unseeing gaze. There was a little blood on the silver knife. It was nothing. He had only cut himself slightly because of—

Because of—

Our eyes met. I think the knowledge came simultaneously into our minds in that meeting of glances. He had felt it too. The explosion of white energy had burst outward in his nerve centers in the same moment it burst in mine. Neither of us spoke. It wasn't necessary.

After what seemed a long while I looked at Dr. Essen. That bright steel glance of hers met mine squarely but there was only bewilderment in it.

"What happened?" she asked.

The sound of her voice seemed to release us both from our speechlessness.

"You don't know?" De Kalb swung around to look at her. "No, evidently you don't. But Mr. Cortland and I—Cortland, how often have you—" He groped for words.

"Since the first of the deaths in Rio," I said flatly. "You?"

"Since the first of them here. And ever since, though very faintly, when they happened in Rio."

"What *are* you talking about?" Dr. Essen demanded..

Heavily, speaking with deliberation, De Kalb told her.

"For myself," he finished, glancing at me, "it began when I first opened the Rec-

ord." He paused, looked at his hand with some surprise and, laying down orange and knife, pulled a handkerchief from his pocket and wrapped it around the bleeding cut. "I didn't feel that at all," he said, almost to himself.

And then, to me, "I opened the Record. I told you that—something—went by me very fast and vanished at the spot where that nekronic stain later came into existence." He looked at me soberly, his eyes narrowed. "Mr. Cortland," he said, "can you tell me that you did *not* experience any feeling of recognition when you first saw that stain on the hearth?"

I got up so suddenly that my chair almost tipped over. Violently I said, "De Kalb, somewhere a man has just died! *Something* killed him. *Something* is making you and me accessories to murder! We've got to put a stop to it! This isn't an academic discussion—it's murder! We—"

"Sit down, Mr. Cortland, sit down." De Kalb's voice was tired. "I know quite well it's murder. We must and will discover the truth about it. But not by shouting at one another. The truth lies in that box on the table. It lies somewhere very far in the future.

"Also, the truth is a being that roams our world, murdering at will. I released it, Mr. Cortland. Unwittingly, but I released it. That was a Pandora box I opened. Trouble and death came out of it. We can only pray that there is hope in the bottom of it, as there was in Pandora's box."

"Look," I said. "Tell me how I can help and I'll do it. But let's not have any more generalities. I'm too close to these deaths. I think I'm in personal danger. Maybe you are too. What can we do?"

"We are not in personal danger from the killer. From the law—perhaps—if this connection from which we suffer were to become known. What can we do? I wish I could tell you. I'm sure of this much—that thing which came from the box, leaving the stain of nekronic matter like a footprint behind it, is a living and dangerous creature. It touched me as it went by. I think by that touch I've become—well, remotely akin to it. Were you touched too?"

I told him.

"Very well," he said. "We *are* in danger. Has it occurred to you yet that where *it* touched the hearthstone, the nekron took root?"

FOR a moment I didn't see what he meant. Then the implication hit me and I went cold and empty inside. De Kalb, seeing the look on my face, laughed shortly.

"I see it has. Very well. So far I haven't detected any sign of nekronic infection in myself. I assume you haven't either. But that proves nothing."

"Have you seen the creature?" I asked.

He hesitated. "I can't be sure. I think I have. Will you tell me exactly what happened to you, please? Every detail, even the irrelevant."

And when I had finished, he exchanged troubled glances with Dr. Letta Essen. "Directive intelligence, then," she said.

"The way it moved," De Kalb murmured. "That's highly significant. And the impossibility of getting a firm grip on the creature. So—Letta, do you agree?"

"Frictional burns?" she asked. "But it didn't move fast enough to cause those. That is—not spatially."

"Not in space, no," De Kalb said. "But in time? Limited, of course. A few seconds' leeway would be enough if you consider the energy expended and the tremendous velocities involved. It looks like a shadow—it seems to have mass without weight—and it has high velocity without spatial motion.

"And Mr. Cortland's tightening his grip on the creature seemed to push it away. Time-movement, then! It vibrates—it has an oscillating period of existence, certainly limited within a range of a few seconds. A tuning-fork vibrates in space. Why not vibration through time—with an extremely narrow range?

"No wonder you couldn't hold the creature! Could you hold a metal rod vibrating that rapidly? You would get frictional burns on your hands—since your own weight would prevent you from partaking of its motion. The being's existence must be, to a limited degree, extra-temporal.

"Consequently, I suppose any weapon used against it would have to be keyed to its own temporal periodicity. That is, if we had a pistol oscillating in time, we might be able to shoot the creature. But the hand that squeezed the trigger might have to be oscillating too."

"Trembling like a leaf," I said. "I know mine would be."

He brushed that away. "How intelligent is this killer? Is ego involved, or merely vampirism? If the creature read your

mind—" He grimaced. "No. No! The missing factor is what the nekron itself is and its special qualities. And we don't know that. We probably never will until we go to the Face of Ea."

I sighed. I sat down. I'd had too many jolts in the past half hour to feel very sure of myself.

"So we travel in time," I said wearily "Mr. De Kalb—you're crazy."

He had enough energy left to chuckle rather wanly.

"You'll think me even crazier, sir, when I tell you what it was I saw down there under the mountain, in the cavern. But I must finish my demonstration before you'll be able to understand."

"Get on with it, then."

HE TOOK up orange and knife again. He fitted the blade into the cut and finished the job of bisecting the fruit a little above its equator. The severed top half lay upon the blade as on a narrow plate. Below it he held the other half of the orange in place, so that it still maintained its unbroken sphere.

"Consider this blade Flatland," he said. "A world of two dimensions, intersecting the three-dimensional sphere. Now if I revolve the lower half of the orange, you will please imagine that the upper half revolves with it. One fruit—you see? The axis remains immovable in relation to the plane in Flatland it intersects.

"Now. I cut this lower half again, straight through. The same axis intersects the same point on this Flatland. In other words, the spatial axis remains stable. You understand so far?"

"No," I said. He grinned, tossed knife and fruit back into the bowl.

"It takes thinking," he said. "Let me go on. Now time is also a sphere. Time revolves. And time has an axis—a single stable extension of a temporal point, drawn through past and future alike, intersecting them all, as that knife-blade touched the orange everywhere in the Flatland dimension. And that, Mr. Cortland, is what makes travel in time theoretically valid.

"The theory of time-travel usually ignores space. The traveler steps into some semi-magical machine, presses a button and emerges a thousand years in the future—but on earth!" He snorted. "In a thousand years, or a thousand days, or in one day, or one minute, this planet along with the whole solar system would have traveled far beyond its position at the moment the traveler entered his machine.

"But there is one point from which he could enter the machine, enter time itself and be sure always of emerging on earth. For each planet, I think, there is one single point. The spot in the Laurentians where I saw—what I saw—was that point for our planet. It is the spot at which the axis of the time-sphere intersects our own three-dimensional world. If it were possible to follow the line of that particular axis you would move through time.

"Well, I believe there *is* movement but along still another dimension, beyond this theoretical fourth which is time—or super-time. Call it a *fifth*. This much I'm sure of—if you could stay in the time axis indefinitely the ultra-time drift would carry you into another era, through era beyond era, wherever other ages intersect the time axis." He shook his head.

"I admit I don't understand it too clearly. It's a science beyond ours. However, I think

[*Turn page*]

I can explain the presence of the Record box now. I believe the people of the Face sent it back in a direction parallel to the time-axis—which, remember, intersects the same area in space always, at any given moment. They sent it very far back, millennia into our past—as you say, like people tossing a message in a bottle into the stream of time.

"Look." He held up his hand, thumb and forefinger touching at the tips. "Two times—my finger and thumb. But they touch at one point only. There you can cross. From the time of the Face to, let us say, some thousands of years B.C. This is vague again, and it is something I don't understand.

"The extension is along still another dimension, possibly the ultra-sphere, this figurative fifth. But it's logical to suppose there would be such a limitation. There is in space. You can step spatially only into areas spatially adjoining yours. And in time—well, it may apply there too."

"All right," I said. "Okay up to now. I'll accept it. Now let's have the kicker. What was it you saw in your cave?"

DE KALB leaned back in his chair, regarding me with a grin.

"I saw you, Mr. Cortland."

I gaped at him.

His grin broadened.

"Yes, I saw you, lying asleep on the floor of the—the egg. I saw myself there too, asleep. I saw Dr. Essen. And lastly I saw Colonel Harrison Murray."

He looked at me with obscure triumph, his grin very wide.

"You're crazy," I said bluntly.

"You're thinking you've never been in a cavern under a Laurentian mountain, I suppose. Very likely. Nor has Dr. Essen. Nor, I imagine, Murray. But you *will be,* my friend. So will we all." The grin faded. Now the deep voice was graver. "And we are all changed, there in the egg. You understand that?

"We are older, by a little, not temporally, but in experience. You can see that on our faces. We have all passed through strange experiences—good, bad, awe-inspiring, perhaps. And the men look—tired, older. But Dr. Essen looks strangely younger." He shrugged heavily. "I don't attempt to explain it. I can only report what I saw." He smiled at me.

"Well, so much for that. Don't look so stunned, Mr. Cortland! I assure you it was yourself. Which means that you will go with us when we take our great leap into the future, into the world of the Face. I believe we will all stand together in the living flesh before that great Face we have seen only in our minds, today.

"Believe? I know it. Those people lying asleep in the time-axis, with instruments on the floor around them to regulate their slumbers, will go forward in time—have gone forward. And they will return in the end to here and now.

"They will go as the box went. From the here and now, forward through the time-axis to the world of the Face. But there is no backward flow along that axis. No one can risk meeting himself in his own past, even if such a thing were possible. So when we return, we must come as the box did, along a path which is parallel to the axis, to that continuous point in time which may be millennia B.C., where the box originally emerged.

"In effect, one goes forward with the flow along the time axis and back around the circumference of the sphere which is time. And there we enter the time-axis chamber again, and are carried forward along the flow to our own present time." He smiled.

"Do you see what that means? It means that one day those four in the Laurentian cavern will waken. And as they wake, as they step out, three men and a woman will enter the chamber and begin their journey into time!"

I GAVE my head a quick shake. Images were whirling in it like sparks from a Fourth-of-July pinwheel. None of them made sense to me, or perhaps only one. But that one was definite.

"Oh no they won't," I said.

"Why not?"

"I will quote you a vulgarism," I said meticulously. "There may be flies on some of you guys, but there ain't no flies on me. *I'm* not going. I know when I'm well off. Jerry Cortland is staying right here with both feet firm upon his own temporal axis. I will write you the best story you ever saw about yourself, Mr. De Kalb, but I won't climb on any merry-go-rounds with you. Is that clear?"

He chuckled deeply.

"But you did, Mr. Cortland—you did!"

CHAPTER VI

The Military Mind

COLONEL HARRISON MURRAY, at sixty, still had a fine military figure and was proud of it. You could see him remember to throw his shoulders back and pull in his waist about once every ten minutes. Then age and the subject at hand would gradually divert him and he would sag slowly—until he remembered again.

He had a discontented drooping mouth, a face all flat slab-shaped planes and an incongruously high thin voice that got higher when he was angry, which was most of the time. He was angry now.

"A man can't help it if he was born a fool, De Kalb," he said. "But luckily we're not all fools. You're going to drop this idiotic sideline of yours, whatever it is, and go back to work on our current job. You agreed to assist the War Department—" He gave me a quick, wary glance. "You agreed to do a certain job."

"I've done it," De Kalb told him. "I've set up the Bureau and laid out all the plans. Oh, it's no secret—we're not the only ones who've been experimenting along this line. I'll be willing to bet Mr. Cortland knows more than you think about this top-secret Bureau of ours. How about that?"

He was looking at me. I said, "Well, I've heard rumors on the grapevine. Hypnotism, isn't it?"

Murray swore softly. De Kalb chuckled.

"Subliminal hypnosis," he said. "It doesn't matter, Colonel. The important secrets are the specialized techniques that have been worked out and they're still under cover—I hope. The Bureau is operating efficiently now. I've set up the plan. Now there are competent researchers doing quite as much as I could do. If I stayed on now it would simply be as a figurehead. My usefulness was over when I explained my theories to the technicians and psychologists who were able to apply them."

"Allow me to decide that," Murray said angrily and there was a pause.

Quietly, from her chair by the window, Dr. Essen spoke. "Ira, perhaps if Colonel Murray saw the Record—"

"Of course," De Kalb said. "No use squabbling any further. Cortland, will you do the honors this time?"

I opened the cupboard door. I took down the wrapped bundle which was the box. I set it on the table between De Kalb and Murray. The Colonel looked suspiciously at it.

"If this is some childish joke—" he began.

"I assure you, sir, it's no joke. It is something the like of which you've never seen before, but there's nothing humorous about it. I think when you've looked into this—this package—you'll have no further objections to the problem I'm working on."

De Kalb undid the wrappings. The stained and battered box, blue-white, imperishable as the time-currents upon which it had drifted so long, lay there before us, the universe and the destiny of man locked inside it.

DE KALB'S fingers moved upon its surface. There was a faint, distant ringing as if the hinges moved to a sound of music and the box unfolded like a flower.

I didn't watch. I knew I'd get nothing further from it now until my mind had rested a little. I looked at the ceiling instead, where the lights from the unfolded leaves and facets of the Record moved in intricate patterns on the white plaster. Even that was hypnotic.

It was very quiet in the room. The silence of the end of the world seemed to flow out of the box in waves, engulfing all sound except for De Kalb's heavy breathing and the quick, rasping breath that came and went as Murray sat motionless, staring at the flicker of lights that had been lit at the world's end and sent back to us along the circumference of time.

I found that I was holding myself tense in that silence. I was waiting—waiting for the nova to burst again inside me, perhaps. Waiting for another killing, perhaps somewhere in my sight this time, perhaps someone in this room. And I was waiting for one thing more—the first spreading coldness that might hint to me that my own flesh, like the stone of the studio hearth, had given root to the nekron.

The box closed. The lights vanished from the ceiling.

Murray very slowly sat upright in his chair. . . .

De Kalb leaned back heavily, his curiously dull eyes full on Murray's face.

"And that's the whole story," he said.

It had taken over an hour of quick, incisive questions and painstaking answers to present Murray with a complete picture of the situation in which he himself played so curious a part. We all watched his face, searching, I think, for some sign of the tremendous intellectual and emotional experience through which everyone must go who opened that box.

Nothing showed. It was the stranger because I knew Murray was almost a hysteric psychologically. Perhaps he'd learned to control himself when he had to. Certainly he showed nothing of emotion as he shot his cold, watchful questions at De Kalb.

"And you recognized me," he said now, narrowing his eyes at De Kalb. "I was in that—that underground room?"

"You were."

Murray regarded him quietly, his mouth pulled downward in a curve of determination and anger.

"De Kalb," he said, "you tell a good story. But you're a grasshopper. You always have been. You lose interest in every project as soon as you think you've solved it. Now listen to me a minute. The indoctrination project you were working on with me is not yet fully solved. I know you think so. But it isn't. I see exactly what's happened. Hypnosis as an indoctrination method has led you off onto this wild scheme. You intend to use hypnosis on whatever guineapigs you can enlist and—"

"It isn't true, Murray. It isn't true." De Kalb was not even indignant, only weary. "You saw the Record. You know."

"All right," Murray admitted after a moment. "I saw the Record. Very well. Suppose you can go forward in time. Suppose you step out, back in the here and now, ten seconds after you step in. You say no time is lost. But what energy you'll lose, De Kalb! You'll be a different man, older, tired, full of experiences. Disinterested, maybe, in my project. I can't let you do it. I'll have to insist you finish that first and then do what you like on this Record deal of yours."

"It can't be done, Murray," De Kalb said. "You can't get around it that way. I saw you in the time-chamber, remember. You *did* go."

Murray put up an impatient hand. "Is this telephone connected with the exchange? Thanks. I can't argue with you, De Kalb. I have a job to do."

We all sat quiet, watching him as he put a number through. He got his departmental headquarters. He got the man he wanted.

"Murray speaking," he said briskly. "I'm at De Kalb's in Connecticut. You know the place? I'm leaving immediately in my plane. I want you to check me in as soon as I get there, probably around three. I'm bringing a man named Cortland with me, newspaper fellow—you know his work? Good? Now Listen, this is important." Murray took a deep breath and regarded me coldly over the telephone. Very distinctly he said into it,

"Cortland is responsible for that series of murders he reported from Brazil. I'm bringing him in for questioning."

CHAPTER VII

Out of Control

I DIDN'T like the way he flew his plane. His hands kept jiggling with the controls, his feet kept adjusting and readjusting the tail-flaps so that the ship was in constant, unnecessary side motion in the air. Murray was nervous.

I looked down at the trees, the tilted mountain slopes, the roads shining in the sun, with little glittering black dots sliding along it that were cars.

"You know you can't get away with this, Murray," I said. It was, I think, almost the first thing I had said to him since we took off half an hour ago. After all, there had been little to say. The situation was out of all our hands, as Murray had meant it to be, from the moment he spoke into the telephone.

"I have got away with it, Cortland," he said, not looking at me.

"De Kalb has connections as powerful as yours," I told him. "Besides, I think I can prove I'm not responsible for those deaths."

"I think you are, Cortland. If there's any truth in what De Kalb was saying, I believe you're a carrier."

"But you're not doing this because you think I'm guilty. You're doing it to stop De Kalb."

"Certainly." He snapped his lips shut. I shrugged. That, of course, was obvious.

We flew on in silence. Murray was uneasy, perhaps from the experience of the

Record. I think now that he had entirely shut his mind to that. I think he was denying it had ever happened. But his hands and feet still jittered on the controls until I itched to take the plane away from him and fly it myself.

It was a nice little ship, a six-passenger job that could have flown alone, almost, as any good plane can do in smooth air if the pilot will only let it. I would probably have said just then, if you'd asked me, that I was in plenty of trouble. My troubles hadn't started. They were about to.

The first intimation was the sound Murray made—a sort of deep, startled, incredulous grunt. I started to turn toward him. And then—time stopped.

I had a confused awareness that *something* was moving through the ship, something dark and frighteningly swift. But this time there was a difference. The thing I had first encountered in a Rio alley had returned. The first pulse of that nova of blinding brilliance burst outward from the core and center of my body. But it did not rise to its climactic explosion of pure violence. The energy suddenly was shut off at the source. The plane was empty of that monstrous intruder.

Beside me Murray hunched over the controls, slowly bending forward. I could not see his face. That instant of relief passed in a flashing time-beat.

AGAIN the pulse throbbed through me. And again it was shut off. There was something terribly wrong with gravity. The earth stood upright in a blurred line that bisected the sky and was slowly, slowly toppling over from left to right. The weight of Murray's body, slumped heavily forward, was throwing the ship out of control.

I couldn't move—not while those erratic jumping shocks kept pounding at me.

But I had to move. I had to get hold of the controls. And then, as I put forth all my strength, the explosion channeled into my brain—different, somehow incomplete. I could feel a swiftly-fading ebb-tide draining into the empty void.

Then it was gone altogether.

Another part of my mind must have taken over then. And it must have been efficient. Myself, I seemed to be floating somewhere in a troubled void with the image of Murray's lolling head and limp arms. Murray—dead. Dead? He must be dead. I knew that nekronic shock too well.

In the mindless void where my awareness floated I knew that I was a bad spot temporally. Jerry Cortland was in a bad spot. Murray's headquarters must be expecting him in already with a murder suspect in tow. I was the murder suspect and murder had been done again. And Murray and I had been alone in mid-air when it happened.

The efficient part of my mind knew what to do. I left it at that. I had no recollection whatever of fighting the plane out of its power dive or of turning in a long high circle as I got lost altitude back. But that must have happened. Time and distance meant nothing to the half of my mind that floated but the other half very efficiently flew the plane.

* * * * *

"All right now?" De Kalb's voice inquired.

I sat up shakily. The room was swimming around me but it was a familiar room. I could see Dr. Essen bending above a couch and I could see polished boots and a shoulder with something shiny on it. I must have brought Murray back. Murray—dead?

"It was—it was the nekron," I said thickly.

"I know, I know," De Kalb said. "You told us. Don't you remember?"

"I don't remember anything except Murray."

"I don't think we can save him," De Kalb said in a flat voice.

"Then he's alive?"

"Just."

We both looked automatically toward the couch, where Dr. Essen lifted a worried face.

"The adrenalin's helping," she said, "but there's no real improvement. He'll sink again as soon as the effect wears off."

"Can't we get him to a hospital?" I asked.

"I don't think medical treatment will help him," De Kalb said. "Dr. Essen has a medical degree, you know. She's already done everything the hospitals have tried on the other victims.

"That creature strikes a place that scalpels and oxygen and adrenaline can't reach. I don't know what or where, but neither do the doctors." He moved his shoulders impatiently. "This is the first time the killer hasn't finished its job. You interrupted it, you know—somehow. Do you know how?"

"It was intermittent," I said hesitantly.

"It kept going away and coming back." I explained in as much detail as I could. It wasn't easy.

"The plane was moving fast, eh?" De Kalb murmured. "So. Always before the victims have been practically immobilized. That might explain part of it. If the nekronic creature is vibrating through time it might need a fixed locus in space. And the plane was moving very fast in space. That could explain why the attack was incomplete—but complete enough, after all."

I nodded. "This is going to be pretty hard to explain to Murray's headquarters," I said.

"There's been one call already," De Kalb told me. "I didn't say anything. I had to think." He struck his fist into his palm impatiently and exclaimed: "I don't understand it! I *saw* Murray with us in that cave! I *saw* him!"

"Has it occurred to you, Ira," Dr. Essen's gentle voice interrupted, "that what you may have seen in the time-chamber was Colonel Murray's dead body, not Colonel Murray asleep?"

HE TURNED to stare at her.

"It seems clear to me," she went on, "that Mr. Cortland is a sort of catalyst in our affairs. From the moment he entered them things have speeded up rather frighteningly. I suggest it's time to make a definite forward move. What do you think, Ira?"

De Kalb frowned a little. "How's Murray?" he asked.

"He's dying," she said flatly. "I know of only one thing that could possibly postpone his death."

"The neo-hypnosis, you mean," De Kalb said. "Well, yes—if it works. We've used it on sleeping subjects, of course, but with a man who is as far gone as Murray, I don't know."

"We can try," Dr. Essen said. "It's a chance. I don't think he'd ever have entered the time-axis of his own volition but this way we can take him along. Things *are* working out, Ira, very surprisingly."

"Can we keep him alive until we reach the shaft?" De Kalb asked.

"I think so. I can't promise but—"

"We can't save him," De Kalb said. "The People of the Face—maybe. And after all, Murray *did* go with us. I saw him. Mr. Cortland, do you think that plane would carry the four of us as far as the Laurentians?"

"Obviously, Mr. De Kalb," I said with somewhat hysterical irony, "obviously, if I guess what you have in mind, it *did!*"

* * * * *

You could see the shaft-mouth from a long way up, dark above the paler slide of dug earth, and shadowed by the thick green of the Canadian mountains.

It was easier to spot from the air than to reach on foot.

We left the plane in a little clearing at the bottom of the slope. It seemed wildly reckless, but what else could we do? And we carried Murray's body up the mountain with us, De Kalb and I, while Dr. Essen, carrying a square case about two feet through, kept a watchful eye on the unconscious man. Once she had to administer adrenalin to Murray.

I still hadn't come to any decision. I could simply have walked away but that would have meant shutting the last door of escape behind me. I told myself that I'd think of some other way before the final decision had to be made. Meanwhile I went with the others.

"It wouldn't be as though I were running away from punishment," I told De Kalb wryly as we paused to catch our breath on the lip of the shaft. Tree-tops swayed and murmured below us, and the mountains were warm in the late, slanting sunlight of a summer evening.

"If your theories are right I won't be escaping from anything. The moment I step into your time-trap my alter ego steps out and goes on down the mountain to take his medicine. All I can say is I hope he has a fine alibi ready."

"He will have—*you* will have," De Kalb said. "We'll have all time at our disposal to think one up in. Remember what our real danger is, Cortland—the nekron. An infection of the mind. An infection of the earth itself and perhaps an infection in our own flesh, yours and mine.

"What it is that I turned loose on the world when I opened that box I don't yet know but I expect to know when I go down that mountain again—ten minutes from now, a million years from now. Both." He shook his head.

"Let's get on with it," he said.

CHAPTER VIII

Fantastic Journey

I DON'T think I ever really meant to embark on that fantastic journey along the time axis. I helped carry Colonel Murray's body down the dusty shaft but it was a nightmare I walked through, not a real experience. I knew at the bottom of the tunnel I'd wake up in my hotel in Rio.

At the foot of the shaft was a hollowed out room. Our flash-beams moved searchingly across the rough walls. We carried Murray into the cave and laid him down gently on a spot the scientist indicated. Dr. Essen immediately became busy with her patient. Presently she looked up and nodded reassuringly.

"There's time," she said.

But De Kalb waved his arm, sending light sliding erratically up the rock, and said, "Time—there *is* time here! This space and this air form one immutable axis upon which all the past and the future turn like a wheel."

It was bombastic but it was impressive too. Dr. Essen and I were silent, trying to grasp that imponderable concept, trying perhaps to catch the sound of that vast turning. But De Kalb had moved into action.

"Now," he said, kneeling beside the black suitcase Dr. Essen had set down. "Now you shall see. Murray is all right for a while? Then—" He snapped open the case and laid down its four sides so that the compact instruments within stood up alone, light catching in their steel surfaces.

He squatted down and began to unpack them, to set up from among part of the shining things a curious little structure like a tree of glass and blinking lights, fitting tiny jointed rods together, screwing bulbs like infinitesimal soap-bubbles into invisible sockets.

"Now, Letta," he said presently, squinting up at her in the dusty flash-beams, "your turn."

"Ira—" She hesitated, shrugged uneasily. "Very well."

I held the light for them while they worked.

After what seemed a long while De Kalb grunted and sat back on his heels. There was a thin, very high singing noise and the tiny tree began to move. I let my flashlight sink upon my knee. De Kalb reached over and switched it off. Dr. Essen's beam blinked out with a soft click. It was dark except for the slowly quickening spin of the tree, the flicker of its infinitesimal lights.

Very gradually it seemed to me that a gray brightness was beginning to dawn around us, almost as if the whirling tree threw off light that was tangible and accumulated in the dusty air, hanging there upon every mote of dust, spinning a web that grew and grew.

It was gathering in an egg-shaped oval that nearly filled the chamber.

BY THE gray luminous dimness I could see Dr. Essen with her hands on a flat thick sheet of metal which she held across her knees. There were raised bars of wire across its upper surface and she seemed almost to be playing it like a musical instrument as her fingers moved over the bars. There was no sound but the light slowly, very slowly, broadened around us.

"In theory," Dr. Essen said, "this would have worked years ago. But in practice, only this very special type of space provides the conditions we need. I published some papers in Forty-one on special atomic structures and the maintenance of artificial matrix. But the displacement due to temporal movement made practical application impossible. Only at the time-axis would that displacement theory become invalid.

"I am creating a rigid framework of matter now. Call it a matrix, except that the vibratory period is automatically adaptive, so that it's self-perpetuating and can't be harmed. Really, the practical application would be something like this—if you were driving a car and saw another car about to collide with you, your own vehicle could automatically adjust its structure and become intangible. So—"

"It isn't necessary for Mr. Cortland to understand this," De Kalb said, his voice suddenly almost gay. "Eager seeker after truth though he may be. There is still much *I* don't understand. We go into terra incognita—but I think we will come to the Face in the end.

"Somehow, against apparent logic, we have managed to follow the rules of the game. Somehow events have arranged themselves—in an unlikely fashion—so that all four of us are entering the time axis where

all four of us lie asleep—intangible, impalpable and invisible except under ultraviolet.

"Murray may die. But since the nekronic creature attacked through time, as I believe, then perhaps sympathetic medicine may cure the Colonel. Some poisons kill but cure in larger doses. I don't know. Perhaps the long catalepsy outside time will enable Murray's wound to heal—wherever it is. I suspect that the people of the Face may have foreseen all this. Are you getting drowsy, Mr. Cortland?"

I was. The softly whirling tree, the sweet, thin, monotonous sound of its turning were very effective hypnotics though I hadn't realized it fully till now. I made a sudden convulsive effort to rise. On the very verge of the plunge I realized that my decision had been made for me.

I FELT my nerve going. I didn't want to embark on this crazy endeavor at all. A suicide must know this last instant of violent revulsion the moment after he has pulled the trigger or swallowed the poison. I put out every ounce of energy I had—and moved with infinite sluggishness, perhaps a quarter of an inch from where I sat.

De Kalb's voice said, "No, no. The matrix has formed."

My head was ringing.

The gray light was like a web that sealed my eyes.

Through it, dimly, remotely, far off in space and time, I thought I could see motion stirring that was not our motion—and perhaps was—

And perhaps was ourselves, at the other end of the closing temporal circle, rising from sleep after adventures a million years in the future, a million years in the past. But that motion was wholly theirs. I could not stir.

Sealed in sleep, sealed in time, I felt my consciousness sinking down like a candle-flame, like a sinking fountain, down and down to the levels below awareness.

The next thing I saw, I told myself out of that infinite drowsiness, would be the Face of Ea looking out over the red twilight of the world's end. And then the flame went out, the fountain sank back upon the dark wellspring of its origin far below the surfaces of the mind.

"And now we wait," De Kalb's voice said, ghostly, infinities away. "Now we wait—a million years."

CHAPTER IX

Strange Awakening

THERE was a rhythmic ebb and flow of waves on some murmurous shore. It must, I thought, be part of my dream. . .

Dream?

I couldn't remember. The murmur was a voice, but the things it said seemed to slip by over the surface of my mind without waking any ripples of comprehension. Sight? I could see nothing. There was movement somewhere, but meaningless movement. Feeling? Perhaps a mild warmth, no more. Only the voice, very low—unless, after all, it were some musical instrument.

But it spoke in English.

Had I been capable of surprise that should have surprised me. But I was not. I was utterly passive. I let sensations come and go in the darkness that lay just beyond me, on the other side of that wall of the silenced senses. What world? What time? What people? It didn't matter yet.

"—of waiting here so long," the voice said on a minor chord of sadness so intensely sweet that my throat seemed to tighten in response. Then it changed. It pleased—and I knew even in my stupor that no one of flesh and blood could possibly deny whatever that strange sweet voice demanded.

"So I may go now, Lord? Oh, please, please let me go!" The English was curious, at once archaic and evolved. "An hour's refreshment in the Swan Garden," the plaintive voice urged, "and I shan't droop so." Then a sigh, musical with a deliberate lilt.

"My hair—look at it, Lord! The sparkles all gone, all gone. Poor sparkles! But only an hour in the Swan Gardens and I'll serve you again. May I go, Lord? May I go?"

No one could have denied her. I lay there enthralled by the sheer music of that voice. It was like the shock of icy water in the face to hear a man's brisk voice reply.

"Save your tongue, save your tongue. And don't flatter me with the name of Lord. This is business."

"But so many hours already—I'll die, I know I'll die! You can't be so cruel—and I'll call you Lord anyhow. Why not? You are my Lord now, since you have the power to let me live or—" Heart-rending sorrow breathed in the sigh she gave.

"My poor hair," she said. "The stars are quite gone out of it now. Oh, how hideous I am! The sight of me when he wakes will be too dreadful, Lord! Let me take one little hour in the Swan Garden and—"

"Be quiet. I want to think."

There was silence for a moment or two. Then the sweet voice murmured something in a totally unfamiliar language, sullenly. The man said, "You know the rules, don't you?"

"Yes, Lord. I'm sorry."

"No more impudence, then. I know impudence, even when I can't understand it. Pay attention to me now. I'm going to put an end to this session. When this man wakes bring him—"

"To the Swan Garden? Oh, Lord Paynter, now? I will love you forever!"

"It isn't necessary," the crisp voice said. "Just bring him to the right station. The City's the nearest connection since this is confidential so far. Do you understand?"

"The City? *Walk* through the City? I'll die before I've gone a dozen steps. My poor slippers—oh, Lord Paynter, why not direct transmission?"

"You'll have new slippers if you need them. I don't want to remind you again all this is secret work. We don't want anybody tuning in accidentally on our wave-length. The transmitter in the City has the right wave-band, so you can bring him—"

HIS voice trailed off. The girl's tones interrupted, dying away in the distance in a faint, infinitely pitiable murmuring quaver. There was a pause, then the sound of light feet returning on some hard surface and a rush of laughter like a spurt of bright fountaining water.

"Old fool," she said, and laughed again. "If you think *I* care—" The words changed and were again incomprehensible, in some language I had never heard even approximated before.

Then movement came, and light—a brief, racking vertigo wrenched my brain around, I opened my eyes and looked up into the face of the girl, and logic was perfectly useless after that. Later I understood why, knew what she was and why men's hearts moved at the sight and sound of her. But then it was enough to see that flawless face, the lovely curve of her lips, the eyes that shifted from one hue to another, the hyacinth hair where the last stars pulsed and died.

She was bending over me, the tips of her scented ringlets brushing my shoulder. Her voice was inhumanly sweet, and so soft with warmth and reassurance that all my bewilderment melted away. It didn't matter where I was or what had happened, so long as that lovely voice and that lovely face were near—which was exactly the effect she had meant to make and exactly the reason why she was there.

I knew her face.

At that moment I was not even trying to reason things out. My tongue felt thick and my mind was lightly furred all over with the effects of—what? Sleep? Some drug they might have given me while I lay there helpless? I didn't know. I accepted all that was happening with a mindless acquiescence. Later I would wonder. Now I only stared up at the lovely, familiar face and listened to the lovely, remotely familiar voice.

"You're all right now," she was murmuring, her changing eyes on mine. "Quite all right. Don't be worried. Do you feel strong enough yet to sit up? I have something I

[*Turn page*]

want you to see."

I got an elbow under me and levered myself slowly up, the girl helping. I looked around.

I was dressed in unfamiliar dark garments and I was sitting on a low couch apparently composed of a solid block of some hard yet resilient substance. We were alone together in a smallish room whose walls looked like the couch, hard yet faintly translucent, just a little yielding to the touch. Everything had the same color, a soft graylike mist or—I thought dimly—sleep itself, the color of sleep.

The girl was the color of—sunlight, perhaps. Her smooth skin had an apricot glow and her gown was of thin, thin silky stuff, pale yellow, like layers of veiling that floated when she moved. There were still a few fading sparkles in her curls. Her eyes just now were a clear bright blue that darkened as I met them to something close to violet.

"Look," she said. "Over there, behind you, on the wall."

I TURNED on the couch and looked. The far wall had a circular opening in it. Beyond the opening I could see rough rock walls, a grayish glow of light, four figures lying motionless on the dusty floor. For a moment it meant nothing to me. My mind was still dim with sleep. Then—

"The cave!" I said suddenly. And of course, it was. That little glittering tree which was the last thing I had seen before sleep overtook me stood there, motionless now. Beside it lay De Kalb.

Dr. Essen slumbered beyond him, the flat metal sheet with the bars of wire still leaning against her knee. She lay on her side, the tired, gentle face half hidden by her bent arm, the gray curls on the dusty floor. There was a rather unexpected gracefulness to her angular body as she lay there, utterly relaxed in a sleep that was already—how many thousands of years long?

My eyes lingered for an instant on her face, moved on to Murray's motionless body, moved back again to search the woman's half-hidden features for a disturbing something I could not quite identify. It was—it was—

The figure beyond Murray's caught my attention suddenly and for an instant my mind went blank with amazement. The puzzle of Dr. Essen's face vanished in this larger surprise, the incredible identity of that fourth person asleep in the dusty cove. I gaped, speechless and without thought.

Up to that instant I suppose I had been assuming simply that all of us were being awakened, slowly and with difficulty, and that I had awakened first. But the fourth person asleep on the cavern floor was Jeremy Cortland. Jerry Cortland—*me*.

I got to my feet unsteadily, finding after a moment or two that I was in fairly good control of all my faculties. The girl twittered in concern.

"I'm all right," I said. "But I'm still there!"

Then I paused. "That means the others may have wakened too. De Kalb—Dr. Essen—have they—?"

She hesitated. "Only you are awake," she said at last.

I walked on slightly uncertain feet across the floor and peered into the cave. There was no cave.

I knew it when I was close to the wall. I could see the light reflected slightly on the texture of the surface. The cave was only another reflection, television perhaps, or something more obscure, but with startlingly convincing depth and clarity.

And if that scene was separated from me in space it might be distant in time as well—I might be seeing a picture of something hours or weeks old. It was an unpleasant moment, that. So long as I thought myself near to that last familiar link with my own world I had maintained a certain confidence that broke abruptly now. I looked around a little wildly at the girl.

"I'm not in that cave now—*they're* not there now either, are they? This was just a picture that was taken before any of us woke. Did you wake first, then?" It was no good. I knew that. I rubbed my hand across my face and said, "Sorry. What *did* happen?"

CHAPTER X

Museum

SHE smiled dazzlingly. And for one flash of an instant I knew who she was. I knew why my eyes had been drawn back in puzzled surprise to Letta Essen lying with curious unexpected grace on the cavern floor.

I met this girl's shining gaze and for that

one instant *knew* I was looking straight into the keen gray eyes of Letta Essen.

The moment of certainty passed in a flash. The girl's eyes shifted from gray to luminous blue, the long lashes fell and the unmistakable identity of a woman I knew vanished. But the likeness remained. The familiarity remained. This girl *was* Letta Essen.

My mind, groping for similes, seized at first on the theory that in some fantastic way Dr. Essen herself stood here before me masked by some science of beauty beyond the sciences I knew, in a shell of youth and loveliness through which only her keen gaze showed.

It was all a trick, I thought—this is Letta Essen who did wake before me, somehow leaving her simulacrum there in the cave, as I had. This is Letta Essen in some amazingly lovely disguise for purposes of her own and she'll speak in a moment and confess—

But it couldn't have been a disguise. This soft young loveliness was no mask. It was the girl herself. And her features were the features Letta Essen might have had twenty years ago if she had lived a wholly different life, a life as dedicated to beauty as Dr. Essen's had been to science.

Then I caught a bewildering gray flash again and I *knew* it was Letta Essen—no disguise, no variation on the features such as kinship or remote descent might account for. The mind is individual and unique. There are no duplications of the personality I knew I was looking into the eyes of Letta Essen herself, no matter how impossible it seemed.

"Dr. Essen?" I said softly. "Dr. Essen?"

She laughed. "You're still dreaming," she said. "Do you feel better now? Lord Paynter—the old fool—is waiting for us. We should hurry."

I only gaped at her. What could I say? If she wasn't ready to explain how could I force her to speak? And yet I *knew*.

"I'm here to welcome you, of course," she said lightly, speaking exactly as if I were some stranger to whom she must be polite, but who was of no real interest to her. "I was trained for work like this—to make people feel at ease. All this is a great mystery but—well, Lord Paynter will have to explain. I'm only an entertainer. But a very good one. Oh, very good.

"Lord Paynter sent for me when he knew you would awaken. He thought his own ugly face might put you into such a mood you'd never answer any questions." She giggled. "At least, I hope he thought so." She paused, regarding me with exactly the cool keen speculative stare I had so often met when the woman before me was Letta Essen. Then she shrugged.

"He'll tell you as much as you ought to know, I suppose. It's all much too mystifying for me." Her glance shifted to the cavern where the sleepers lay motionless and I thought there was bewilderment in her eyes as she looked uneasily from face to sleeping face. Again she shrugged.

"Well, we should go. If we're late Lord Paynter will have me beaten." She seemed very unconcerned about the prospect. "And please don't ask questions," she added, "for I'm not allowed to answer. Even if I knew the answers. Even if I cared."

I was watching her with such urgent attention that my eyes ached with the effort of trying to be more than eyes, trying to pierce through her unconcern and see into the depths of the mind which I was certain was Letta Essen's. She smiled carelessly at me and turned away.

"Come along," she said.

There was nothing for me to do but obey. Clearly I was expected to play the same game her actions indicated. With some irony I said, "You can tell me your name, can't you?"

"I am Topaz—this week," she said. "Next week, perhaps—something else. But you may think of me until then as Topaz."

"Thanks," I said dryly. "And what year are you Topaz in? What country? Where am I, anyhow?"

"The Lord Paynter will tell you that. I don't care to be beaten."

"But you speak English. I can't be very far from home."

"Oh, everyone who matters knows English. It's the court language of the Mother Planet, you see. The whole galaxy operates on an English basic. There has to be some common language. I—oh dear, I *will* be beaten! Come along."

She turned away, tugging me by the arm. There was a button on the opposite wall and the way she walked beside me toward it, the way she reached to touch the button, followed so definite a pattern of graceful motion that it seemed like dancing.

In the wall a shutter widened. Topaz turned. "This is the City," she told me.

I HAD seen the beginnings of such places in my own time. In the second level under Chicago, by the canal—at Hoover Dam—in the great bridges and the subways of Manhattan. Those had been the rudiments, ugly, crude, harsh. This was a city of machines, a city of metal with blood of invisible energy.

Ugly? No. But frightening—yes.

Topaz led me across a strip of pavement to a cushioned car like a big cup and we sat down in it and the car started, whether or not on wheels I can't say. It moved in three dimensions, rising sharply in the air sometimes to avoid collisions, to thread its intricate pattern through that singing city.

The sound was, perhaps, the strangest part. I kept watching and listening with the automatic attention of the reporter, senselessly making mental notes for articles I would never write. A single note hummed through the city, clear and loud as a trumpet, sliding up and down the scale. Not music, for there was no pattern, but much like a clarinet, varied every changing second.

I asked Topaz about it. She gave me a glance from Letta Essen's eyes and said, "Oh, that's to make the noise bearable. You can't get rid of the noise, you know, without sacrificing the effect but you can transform it into harmonious sound that does convey the proper things. There's—what do you call it— frequency modulation. I think that's it.

"All the noises of the City every second add up to one key vibration, a non-harmonic, and that's simply augmented by a machine so the audible result isn't so unpleasant. The only alternative would be to blanket it completely and that would mean sacrificing a good part of the total effect, you know."

"I don't know," I said. "What do you mean, effect?"

She turned in the car to look at me. Suddenly she dimpled.

"No, I see you don't understand. Well, I won't explain. I'll save it for a surprise."

I didn't argue with her. I was too busy staring around me at the City. I can't describe it. I won't try and I don't need to. You've read about such places, maybe pictured them for yourself. Precision, perfect functionalism, all one mighty machine made up of machines.

There were no humans, no life, except for us under the dome of steel sky. The light was gray, clear, oddly compact, and through that steel-colored air the city trumpeted its wailing cry of a world that was not my world, a time that was yet to come.

Where was the red twilight of the world's end? Where was the Face of Ea, from which the call for help had come?

Or did that world lie somewhere just outside the city? Something had gone strangely wrong in the time-axis—that much was certain. If I let myself think about it I'd probably start gibbering. Things had been taken out of my control and all I could do was ride along.

We drew up before a towering steel and plastic building. Topaz jumped briskly out of the car, took my hand confidently and led me into the low door before us. We had stepped straight into an elevator apparently, for a panel sighed shut behind us and I felt the familiar pressure underfoot and the displaced air that means a rapid rising up a shaft.

The panel opened. We stepped out into a small room similar to the one in which I had awakened.

"Now," Topaz said with relief. "We're here. You were very good and didn't ask too many questions, so before we go I'll show you something."

She touched another button in the wall, and a plate of metal slid downward out of sight. There was thick glass behind it. Topaz fingered the button again and the glass slid down in turn. A gust of sweet-smelling air blew in upon us. I caught my breath and leaned forward to stare.

We were very high up in the city but we were looking out over a blossoming countryside, bright in the season of late spring. I saw meadows deep in grass and yellow flowers, far below. Streams winked in the bright, clear sunlight, here and there fruit-trees were in blossom. Bird-song rose and fell in the sunshine.

"This, of course," Topaz said, "is the world we live in. There's only one museum."

"Museum?" I echoed almost absently, "What museum?"

"The City. There's only one. All machines and robots. Isn't it horrible? They built like that, you know, back in barbarous times. We keep it in operation to show what it was like. That's why they can't blanket the noises altogether—it would spoil the effect. But no one lives here. Only students come sometimes. Our world is out there."

"But where do people live?" I asked. "Not in—well, villages, communities?"

"Oh no. Not any more. Not since the dark ages. We have transmission now, you see, so we don't need to live huddled up together."

"Transmission?"

"This is a transmitter." She waved at the room behind us. "That other place, where you woke, was a receiver."

"Receiver of what? Transmitter of what?" I felt like Alice talking to the Caterpillar.

"Of matter, naturally. Much easier than walking." She pressed the stud again and the glass and metal slid up to shut out that glowing springtime world. "Now," she said, "We'll go—wherever it is we're going. I don't know. Lord Paynter—"

"I know—the old fool."

Topaz giggled. "Lord Paynter's orders are already on record. In a moment we'll see." She did something with the buttons on the wall. "Here we go," she said.

Vertigo spun through my mind. The wailing of that ancient, wonderful, monstrous City died away.

CHAPTER XI

Thirty Second Interlude

IT WAS a little like going down fast in an elevator. I didn't lose consciousness but the physical sensations of transmission were so bewildering and so disorienting that I might as well have been unconscious for all the details I could give—then or later—about what happens between transmitter and receiver. All I know is that for a while the walls shimmered around me and gravity seemed to let go abruptly inside my body, so that I was briefly very dizzy.

Then, without any perceptible spatial change at all, the walls suddenly steadied and were not translucent pale gray any more, but hard dull steel, with the rivets showing where plates overlapped and here and there a streak of rust. I was in a somewhat smaller room than before. And I was alone.

"Topaz?" I said tentatively, looking around for her. "Topaz?" And then, more loudly, "Dr. Essen—where are you?"

No answer, except for the echo of my voice from those dull rusty walls.

This time it was harder to take. I don't know why. Maybe things like that are cumulative. It was the second time I'd taken a jump into the unknown, piloted by somebody who was supposed to know the angles, and come out at the far end alone and in the wrong place.

I looked at the walls and fought down sheer panic at the possibility that this time I had really gone astray in the time-dimension and wakened here in the same room from which I'd set out in the City museum, a room now so aged that the wall surfaces had worn away and the exposed steel corroded and only I remained alive and imprisoned in a dead world.

It was a bad moment.

I had to do something to disprove the idea. Obviously the one possible action was to get out of there. I took a long step toward the nearest wall—

And found myself staggering. Gravity had gone wrong again. I weighed too much. My knees were trying to buckle, as if the one step had put nearly double my weight upon them. I braced my legs and made it to the wall in wide, plodding steps, compensating in every muscle for that extraordinary downward pull.

The moment my hand touched the wall there was a noise of badly oiled hinges and a door slid back in the steel.

Now let me get this straight.

Everything that happened happened extremely fast. It was only later that I realized it, because I had no sense of being hurried. But in the next thirty seconds the most important thing that was to occur in that world, so far as I was concerned, took place with great speed and precision.

Through the opening came a cool dusty light and the sound of buzzing, soft and insistent. I guessed at anything and everything.

I stood on the threshold of an enormous room. It was braced, tremendously braced, with rusted and pitted girders so heavy they made me think of Karnak and the tremendous architecture of the Egyptians. In an intricate series of webs and meshes metal girders ran through the great room, catwalks, but perhaps not for human beings, since some were level while others tilted dizzily and on a few one would have had to walk upside-down. I noticed, though, that

while most of the catwalks were rusted those on which a man could walk without slipping off were scuffed shiny.

There was a series of broad high windows all around the room. Through them I could see a city.

Topaz had said there were no cities in her civilization except for the Museum. Well, perhaps there weren't. Perhaps I had plunged unknowingly into time again, and looked upon a city like that Museum, no longer preserved in dead perfection. This city was living and very old. An obsolete metropolis, perhaps a nekropolis in the sense De Kalb had used the term. Everywhere was decay, rust, broken buildings, dim lights.

The sky was black. But it was day outside, a strange, pallid day lit by bands of thin light that lay like a borealis across the dark heavens. Far off, bright but not blinding, a double sun turned in the blackness.

BUT there were people on the streets. My confidence came back a little at the sight of them, until I realized that something curious was taking place all through the city as I watched a strange, phantom-like flitting of figures—men flashing into sight and out again like apparitions in folk-lore. I stared, bewildered, for an instant, before I realized the answer.

Perhaps in a city of the future like this one I had expected vehicles or moving ways of endless belts. Now I saw that at intervals along the street were discs of dull metal set in the pavement. A man would step on one —and vanish. Another man would suddenly appear on another, step off and hurry toward a third disc.

It was matter-transmission, applied to the thoroughly practical use of quick transportation.

I saw other things in that one quick look about the city. I won't detail them. The fact of the city itself is all that was important about that phase of my thirty seconds' experience there.

There were two other important things. One was the activity going on in the enormous room itself. And the third was waiting almost at my elbow. But I'm taking these in the reverse order of their urgency.

Something was happening on the far side of the room. It wasn't easy to see, because of the distance and because a number of men in dark close-fitting garments clustered around it. I thought it might be an autopsy.

There was a table as high as an operating table and a man or a body lay stretched out on it. Above the table hung a web of thin, shining, tenuous matter that might have been lights or wires. It made me think, for no clear reason, of a complex chart of the neural system.

At the lower edge the bright lines appeared to connect with the object on the table. At the top they vanished into a maze of ceiling connections I couldn't follow. Some of the wires, or lights, were brilliantly colored, others were silvery. Light and color flowed along them, coalesced at intersections, glowed dazzlingly and flowed on along diverse channels downward.

That was the thing of secondary importance which I saw there. The thing of primary importance stood about six feet away from me, waiting.

Now this is the difficult part. I must get it as clear as I can.

A tall man stood facing me. He had been standing there when the door opened. Obviously he expected me. He wore tight-fitting dark clothes like the others. He was well-made, even handsome, with the emotionless face of a Greek statue or a Buddha.

He was Ira De Kalb.

I had a moment of horrible internal vertigo, as if the bottom had dropped wholly out of my reason. It couldn't be happening. For this was De Kalb and it wasn't, exactly as Topaz had been Dr. Essen—and not Dr. Essen. In this case, at any rate, there was almost no physical difference. This man before me was the man I had last seen asleep in the cavern of the time-axis, no younger, no older, not changed at all except for one small thing.

The Ira De Kalb I had known possessed strange veiled eyes, filmed like a bird's, grayed with light blue dullness. But this De Kalb, who regarded me with unrecognizing coldness, as if he had never seen me before in his life, looked out of curiously changed eyes.

HIS eyes were made of metal.

It was living metal, like burnished steel with depth behind it, yet not real steel —some alloy unknown to me, some bright unstable thing like quicksilver. I could see my own face reflected in the eyes, very small and vivid, and as my reflection moved, the eyes moved too.

I took a deep breath and opened my mouth to speak his name.

But I did not make a sound. There wasn't time. He had been standing there with an immobility that was not human. An image of metal would stand like that, not seeming to breathe, no tiniest random motion stirring it. And I had an instant's uncanny recollection that the De Kalb I knew had moved with curious clumsiness, like an automaton.

Then the metal eyes moved.

No, *I* moved.

It was a fall, in a way. But no fall I could accurately describe. It was motion of abnormal motor impulses, fantastic simply because they were without precedent. One walks, actually, in a succession of forward-falling movements, the legs automatically swinging forward to save one from collapse toward the center of gravity.

This was reaction to a sort of warped gravitational pull that drew me toward De Kalb. It was the opposite of paralysis—a new gravitation had appeared and I was *falling* toward it. It was like rushing down a steep slope, unable to halt oneself.

His strange, smooth face was expressionless but the metal eyes moved, watching me, reflecting my twin images that grew larger and larger as I *fell* upon him down a vertiginous abyss. The eyes came toward me with an effect of terrible hypnosis, probing into mine, stabbing through the reflection of my own face, my own eyes, and pinning the brain in my skull—probbing into my mind and the little chamber behind the mind, where the ego lives.

Then he was looking out—through my own eyes! Deep in my brain the metal gaze crouched, looking watchfully outward, seeing what I saw.

A telepathic rapport? I couldn't explain it. All I knew was the fact. De Kalb was a spy in my brain now.

I turned around. I went back toward the door into the transmission room. I closed the door. I was alone there. But the metal eyes looked at the room as I looked at it. I had no control over my motions while I saw my own hand rise and finger the wall. But when the room began to shimmer and the disorientation of matter-transmission shivered through my body I knew I had my muscles and my will back again. I was free to move as I liked. I was free to think and speak—

But not about what had just happened. It may have been something like post-hypnotic command, to give it a label. That's familiar and easy to explain. But it wasn't easy for me. Remember, I'd looked into De Kalb's quicksilver eyes.

All this happened in something under thirty seconds. I've given you, of course, conclusions and afterthoughts that came to me much later, when I had time to think over what I'd seen and correlate it. But I woke in the rusted room, I looked out into a city on a planet outside our solar system, I saw something like an autopsy in a vast laboratory braced as if to withstand unearthly pressures, I met the gaze of Ira De Kalb and then the thing had happened between us—happened. And I returned to the transmitter.

The room vibrated and vanished.

CHAPTER XII

The Swan Garden

TOPAZ squealed with sheer delight.

"Come on out!" she cried. "It's the Swan Garden! What are you waiting for anyhow? I'll take back all I ever said about Lord Paynter. Oh, *do* look, isn't it wonderful here?"

Silently I stepped after her through the door.

So little actual time had elapsed that I don't think she really missed me. Something had reached out through the matter-transmitter and intercepted one of us and let the other go on. But Topaz must have rushed out of the door the moment it opened and been too overcome with pleasure at finding herself just here to realize I was lagging behind.

And I—had I really been for a round-trip through a galaxy? Had I dreamed it? Was this whole interlude a dream while my own body slept in the time-axis, waiting for the world's end? In preparation for that sleep I had begun to learn how to ignore time as a factor in our plans.

In this world, waking or sleeping, evidently I must learn to ignore space. Distance meant nothing here with the matter-transmitters functioning as they did. You could live on Centaurus and get your breakfast rolls fresh from a bakery in Chicago.

You could drop in on a friend on Sirius to borrow a book, simply because it might be easier than to walk around the corner for one. And in the annihilation of space, time too seemed to undergo a certain annihilation. Just as, in ignoring time, you could as a corollary overstep space.

I had overstepped reason too. I had come into a world where nothing made sense to me, where the people who had been my companions moved behind masks, stirred by motives that were gibberish. I had overstepped both space and time just now, and so compactly that the girl who called herself Topaz never missed me.

I was still too dazed to argue. I could control my own motions again but my mind had suffered too much bewilderment to function very well. I followed Topaz dumbly, staring about me at the remarkable landscape of the Swan Garden—knowing in some indescribable way that inside my mind other eyes stared too, impassive metal eyes that watched my thoughts as they watched the things around me.

Topaz spun around twice in sheer delight, her sun-colored veils flying. Then she ran her hands through her hair, dislodging a last sparkle or two, and, smiling at me over her shoulder, beckoned and hurried ahead through what seemed to be a wall of white lace.

A gentle breeze stirred it, shivering the folds together and I saw that we were following a narrow path through a grove of head-high growths like palmetto, except that the leaves and flowers were white, and shaped like enormous snow-flakes, each a perfect crystalline pattern and every one different from every other.

Topaz ran her hands lovingly through the flowers as we went down the path. Underfoot the ground had the look and feel of soft down. After a moment we entered a cleared space with what seemed at first glance a stream of water tracing an arabesque path among huge, humped boulders. The breeze freshened, the lacy curtains shimmered and thinned before it and I saw a gossamer vista beyond of unreal gardens where fantastic beauties lay in wait.

"Sit down," Topaz said. "I don't know why Lord Paynter sent us here but I suppose he'll join us when he's ready. Isn't it lovely? Now I can have my hair starred again. Oh, do sit down! Right there, on that—"

"That rock?" I asked.

"No, that *chair*. Look." She sank lightly on one of the boulders and it curved and moulded itself beneath her to a couch the shape of her body, fitting every bend of her limbs perfectly. It looked very comfortable.

I GRINNED at her and sat down myself, feeling thick, resilient softness yielding as I sank. Deliberately I turned off my mind. Events wholly beyond my control had catapulted me into this world and this complex situation.

The only way I could keep sane was to ride along without a struggle until the time for action came. I thought I'd know it when it did. There was no use asking questions of this lovely deliberately feather-brained little creature beside me. Perhaps, when Paynter came—

"Have some fruit," Topaz invited, gesturing at the stream flowing past.

I looked again. It wasn't a stream. Call it a tube, of flowing crystal, hanging unsupported in the air about three feet off the ground. It came out of the downy earth at the edge of the trees, twisted intricately around the boulders and dived into the ground again farther on. From where I sat I could touch one arch of it without stretching.

Drifting past my hand came a globe, large as an orange, of a pale green translucence. Topaz put out her hand, waited for it to drift nearer, plucked it out of the stream. She gave it to me, cool and dripping from its bath.

"Eat it if you like," she said. "Choose what you will. I'm going away for awhile. Oh, I've been so good to you! Hours and hours I sat waiting for them to wake you up and my hair grew all dull and horrible." She shook her curls and her face brightened.

"I'll show you," she promised. "I'll use the star-powder all over. It takes some planning, though. The stars in my hair will have to be a different color and my face—a half-mask, do you think? A dark mask, set off by the stars? Or jet stars along my arms, like gloves."

Somewhere among the trees in the direction from which we had just come a gong sounded one clear note. Topaz looked up. "Oh," she said. "Lord Paynter."

I felt in the center of my mind a sudden quickening of interest. The spy who had usurped my senses was preparing for action. But—what action?

I bit into the pale green fruit Topaz had handed me. It wasn't yet my problem. If anything, it was De Kalb's. I'd have to know more before I could do a thing. I sank my teeth into crisp moist sweetness that tingled on the tongue like something mildly alcoholic. It was delicious.

"Lord Paynter—welcome to the Swan Garden!" Topaz rose from her rock and swept an elaborate and probably ironic curtsey, her bright veils billowing. "Hideous as I am," she added, "and it's all your fault, I make you welcome. I—

"Be quiet, Topaz," a familiar voice said.

I got to my feet and turned to face him as he came out from among the crystal-shaped flowers that hid the path. It was the voice I had heard in my dim awakening moments here. But it seemed to me now even more familiar than that. A thin cold flat voice, a little too high. Oh yes, I had heard it before—perhaps a thousand years before.

He was a tall man, big, thick, heavy, with a fine military bearing. He had a down-drooping mouth between the flat slabs of his cheeks, very sharp pale blue eyes—Murray's eyes, Murray's face, Murray's voice. It *was* Colonel Harrison Murray.

It wasn't surprising, of course. So far as I knew, there might be other people in this world and there might not be. Maybe it was simply a dream, peopled by the three who still lay asleep beside me in the time-axis, dreaming as I dreamed. Only, they didn't suspect, apparently. They thought all this was real. Only *I* knew that the whole thing might explode like a bubble at any moment. . . .

Murray, if this were not a dream, had been healed in the long bath of time, for he looked perfectly restored now. That injury to the hidden place of the mind or the soul or the body, where the nekronic being struck, was something that could mend then, with time. With *time*—

Were we in the world of the Face? *Had* we wakened? Did we still sleep? How could I possibly find myself now in a world where Dr. Essen moved behind a mask of beauty by the name of Topaz and Murray, unchanged in any particular, called himself Paynter with a perfectly straight face, and De Kalb—De Kalb—what about De Kalb?

I do not know.

Blankly I looked around. No one had spoken. But the voice was in my brain. De Kalb? It came again.

I do not know but I intend to learn. Be quiet and we will learn together.

PAYNTER strode briskly forward, his boots ringing on the downy earth. He wore what might have been a uniform, tight-fitting, dun-colored. He gave me a keen, competent glance in which no recognition stirred, then nodded.

"Good day. Hope you're feeling better. All right, men, bring the boxes over here."

He stood aside and two men in uniform lugged forward a gray box the size of a small table. It had metal banding around it and a series of sockets along the top. They set a second and smaller box beside it and stood waiting.

I found myself staring at them with far more interest than I felt in the boxes. Here were the first people I had seen closely, at first hand, who didn't belong in the dream. Their presence shook me a little. Perhaps it wasn't a dream then. Perhaps there really was a tangible world around us, outside this garden. Perhaps I had really awakened out of the time-axis.

I turned to look at Murray—at Paynter—who still regarded me keenly as he sat down on one of the rubber-foam rocks. I sat down again too, watching him with new patience now. I could afford to wait. After a moment he spoke.

"Topaz showed you the cave where we found you?"

I nodded.

"Oh yes, I did everything you ordered, Lord Paynter," Topaz contributed. "I pretended that nothing—"

"Be quiet, Topaz," Paynter said with some irritation. And then to me, "What's your name?"

"Cortland," I said, and added ironically, "Lord Paynter."

"Job Paynter," he corrected me calmly. "Topaz calls everybody Lord—when she wants something. Call me Paynter. It isn't customary to use courtesy titles here."

"Oh, but it is," Topaz said. She was kneeling by the stream and flicking bits of spray out of it. "Mister and Mistress and Lord and—"

"Topaz, stop playing and run away for awhile." Paynter was half irritated, half indulgent.

"Oh, thank you, Lord Paynter!" She was on her feet in an instant, beaming with

smiles. "My hair—there's so much to do! Call me when you want me." She vanished among the snow-crystal trees, moving with that extraordinary grace that was as natural to her as breathing.

I watched her go, seeing incongruously superimposed upon her averted face the features of Letta Essen. They were the same. I was sure of it. Imagine Letta Essen twenty years younger, with the same keen brilliance turned to deliberate irresponsibility, deliberate loveliness, and you would get—Topaz. But a Topaz who did not seem to know she had a double.

"Now, Cortland," Paynter said, putting his hands on his knees and regarding me narrowly, "we have a lot of talking to do. I've heard the playback of your conversation with Topaz when you first woke. I assume you—ah—believe you're from the first half of the twentieth century, right?"

"You know I was asleep in the cave," I said. "You must have seen me."

"I did. We analyzed the tissues and clothing of all the sleepers. Low radioactivity, so we know the sleep began before the atom wars. So that's all right. It's time-travel. We can't very well doubt that. But you'll have to tell us how the sleepers got there and how *I* came to be with them." He shook his head rather dazedly.

I glanced around the little snow-veiled clearing where we sat. The two soldiers had finished their task and left us at a wave from —Paynter? Topaz was gone. We were quite alone, lying back comfortably on our rubber-foam boulders, the stream gurgling faintly past us through the rocks and the air.

"Maybe you can explain things now, Murray," I said.

He regarded me with a sort of fixed watchfulness, alert, waiting.

"Murray?" he said after a moment when I did not speak again. "Murray?"

"All right—Paynter," I conceded. "But let's have the explanation. Things are getting too far ahead of me."

"I'll be glad to explain everything I can to you, in a few minutes," Paynter said, gesturing toward the gray boxes. "I don't understand what it is you're implying, though. I almost get the impression that you think you know me."

"I knew a man named Murray who looked exactly like you—if you want to play it this way," I said. "But it looks pretty obvious what happened. You and the others woke before me. You may have wakened months or years sooner. You went out into this world, whatever it is—whenever it is—and made places for yourselves. Now it seems to suit all of you to pretend I'm a poor relation you never heard of. That's what *I* think happened. Maybe you've got a better story."

He exhaled noisily, a heavy sigh that was partly of impatience.

"I think I see what you mean. That doubling of images confuses all of us. You really don't know, then?"

"I really don't know."

"Obviously, I—or my image—was in that cavern with yours. There was also a woman there. I didn't recognize her. The third man was Belem." He paused and fixed me with that expectant look again.

"Belem," I echoed. "Where I come from we pronounce it Ira De Kalb."

"Belem," he told me firmly, ignoring the feeble levity, "is a Mechandroid. He isn't human. Did you know that?"

CHAPTER XIII

Lord Paynter's Problem

NOT *human,* I thought, remembering those eyes of cool metal. I sent an inward thought searching out the mind that crowded my own mind in the narrow confines of my head. *Not human?* I got no answer, for a moment. Then there was a whisper like a distant voice.

Watch and wait, it told me quietly.

"I don't know what a Mechandroid is," I said as calmly as I could. "I don't seem to know much of anything about this place. One thing I'd like to get clear—where I'm *not.* Tell me, Paynter—Murray—whoever you are, whether you remember anything about the Face of Ea."

He scowled thoughtfully. I was watching but I saw no flicker of recognition.

"I can have inquiries made," he offered. "It means nothing to me, but we have colonies now on so many worlds—"

"Never mind," I said rather dizzily. "Forget it." Whether he knew or not he wasn't going to give away anything in that connection. "All right, one more thing then. What century is this?"

He told me. It doesn't matter. It wasn't the time of the world's end. I was sure of that—or as sure as I could be of anything just then. Nowhere in the galaxy yet was that red twilight or the towering Face. Something had gone wrong during our journey. Something had broken it and roused us to wakefulness too soon. Perhaps millennia too soon. And I was the only one of us who remembered at all what mission we'd set out upon.

Remembered? A sudden idea struck me and I said quickly,

"How about this, Paynter—suppose you really *are* Murray with amnesia? You could have awakened and forgotten somehow. You might—"

"That's impossible," he said firmly, shaking his head. "I know my complete history. I was born Job Paynter, on Colchan Three, of Earth stock, fifty years ago, and I can remember a complete life. No intervals missing."

"All right," I said. "You suggest something."

"I wish I could. We seem to be at a stalemate. We—"

His voice suddenly went thin and dim in my ears. I felt my breath rush inward with a shuddering gasp and—

Out of the past, into the secret recesses of my mind burst a familiar soundless roar of energy. Paynter and the garden behind him were fading, insubstantial shadows. Nothing existed for a terrible blinding moment except this bursting light-speed gush of energy as—

As the *thing* made its kill.

The next thing I saw was Paynter's face. He was watching me narrowly out of hard blue eyes and it seemed to me his cheeks were curiously flushed.

I don't know how long a time had elapsed. Obviously it was time enough for a report to come through, for he was speaking into an instrument on his wrist. I didn't understand the language he used. I sat there limply, too dazed still to move or think, while he watched me with that pale stare.

I struggled to regain my detachment in the face of a shock that had left me sweating with plain physical fear. Somehow I had lost touch with my human companions in the long journey but it was clear that there was one fellow-traveler whom I had *not* lost. The creature whose track was the nekron—the killing thing whose touch was an infection of matter itself.

Paynter lowered his wrist. "Cortland," he said, "one of the men who helped set up this machine has been killed just now. Burned. It's something no one seems to have seen before—burns of that type, I mean. You—ah—you seemed affected just now. Have you anything to tell me about this?"

I looked at him dumbly. Then there was a stirring in my mind and the metallic gaze of the dweller there seemed to glance out through mine.

That was very curious, the cold, watchful awareness that was De Kalb said calmly. *Comply with Paynter now. Do as he suggests. I think I may be starting to understand.*

I SIGHED heavily. I hoped he was. Things were entirely out of my hands now. I watched Paynter take a black helmet out of the smaller box before him, plug in its cord to the larger box, hold the headpiece out to me.

"Here," he said briskly. "You and I could ask one another questions until doomsday and not come nearer any understanding. This will put us in a mental rapport—fast and complete."

I looked at the thing sceptically, feeling dubious. It was all very well for De Kalb in my mind to urge compliance. How did I know what his real interests were? What Paynter's were? Certainly not the same as mine.

"Let me think this over a minute," I said doubtfully. "I don't understand—"

"The control is set for certain basic problems," Paynter said in an impatient voice. "We'll open our minds to each other, that's all. There's automatic screening to eliminate trivialties but everything centering around the basic of time-travel will be revealed in three seconds, much more clearly than you could possibly convey it in words. In return, you'll understand all you need to know, so that you can talk to me intelligently and won't have to stop for questions every third word. Put it on, man, put it on!"

I lifted the helmet dubiously. For a moment I hesitated. Then the memory of the dead man so near us flashed vividly through my mind and I knew I had no time to lose. It might happen again. I was afraid of what Paynter might discover—but how could I refuse now? How much had he noticed when the killer struck? Perhaps it would be

better if he knew the whole story.

The helmet slipped easily on my head and seemed to adjust itself automatically. Paynter was saying something about projection.

"You had books in your time. In a good one there's projection—you felt the way the author wanted you to feel. This is simply a further development. You may relive the experiences of historical persons, if the screening works out that way. I'll get certain knowledge from you, you from me—and we draw on the projection library as a supplement. a concordance, if necessary."

His fingers were busy adjusting controls. I had time enough to think, "This is the forerunner of the Record, of course. One of the steps toward something more complex."

Then a bar of spinning light sprang up from the larger box, whirling so rapidly that atoms of light seemed to spiral out from it. And—*then I was somebody else.*

I was a guy named Bannister who'd been born after Hiroshima. I was standing in a room a mile underground. The General was sitting at his desk playing with a pistol. We were temporarily safe here, though it wasn't really safe anywhere. Still, there was a half mile of valves. Geigers and filters—the atomic absorption stacks—between us and the surface, so not much radiation could get in.

"Let's have it," the General said.

This was one war that hadn't gone by the rules. This time the top men were getting killed—the ones who'd always died in bed before. So they were beginning to grope frantically around in Pandora's box muttering, "Where'd Hope get to?"

They were beginning to find out they should have stood in bed.

The Second Atomic War. I—*whoever I was*—never thought about it. I'd lived it for some years. I guess I was one of the early mental mutations, part of the social mutation that had to take place after the world began to rock like a gyroscope slowing down. I knew already I didn't think in quite the same way the older men did. Sometimes I wondered if the change, after all, meant only a keener ruthlessness.

The General said, "Well? Where's the report?"

"He's done it, sir," I said.

The General put the pistol down on his desk and showed his teeth. "Is it practical? That's the point."

"It's practical, sir," I said. "Inanimate matter only, so far. But such matter can be transported for a thousand-mile radius. A receiver must be spotted first, though. It means interplanetary colonization one of these days—because the first space-ship can take a receiver with it and open up a pipeline for supplies. This is only the start."

"A matter-transmitter," the General said and suddenly crumpled the papers on his desk. "Armistice? We'll forget that now. GHQ will change its tune now we've got this new weapon."

"The inventor wants to use the device for peaceful purposes, sir," I said. "I heard rumors the war was over."

He looked at me. "They all do. Yes, the war was over yesterday. But we'll start it again."

Then I knew that I was a mutation after all—mentally. The General and I just didn't think the same way. We didn't have the same values and we never would. He hadn't matured in an atomic world.

I had. I picked up the pistol from the General's desk. His brain was obsolescent anyway.

THEN I was somebody else.

"Cities?" I said to my visitor. "No, we'll never rebuild them. We won't need to."

"But the world is in ruins."

"Technology is the answer."

"You mean machines can build where men cannot?"

"Aren't they doing it?"

They were—yes. Old as I am, over a hundred—*whoever I was*—I could not remember a time when the planet had not been radiotoxic. Not all of it, of course. The men that were left, the survivors, gathered in the islands relatively free from the poison. Travel, even by plane, would have been too dangerous, but we had the matter-transmitters. So we were not insular. There were the colonized planets.

Still, Earth was the home. With the half-time of the radiodust, it would be a long time before most of the planet would become habitable. Yet Earth could be rebuilt, in preparation, by machines.

"I will show you my plan," I said. "Come with me. I'll be dead long before there's a use for my Mechandroids, but that day will surely come."

He followed me along the corridor. He

was a powerful man, one of the most powerful in the world, but he followed me like a young student.

"It's hard to know the best plan," he said, half to himself.

"We have a Galaxy to colonize. Human minds can't cope with that. Nor can machines. The machines must fail because they're emotionless and inhuman. What you need is a human machine or a mechanical human. A perfect blend. A synthesis. Like my Mechandroids."

I pulled back a curtain and showed him the young strong body in the glass coffin. The machines clicked and hummed from all around. The wires quivered slightly.

"This is one of my Mechandroids," I said. "They cannot reproduce; they do not breed true. But they can be manufactured. It's as though a machine had given birth to a human."

"He looks thoroughly normal."

"I chose his parents. I needed the right heredity. I selected the chromosomes most suited to my needs—and I tried time after time before I succeeded. But then this Mechandroid was born. Almost since birth he has been trained—hypnogenically—educated, indoctrinated, by the thinking-machines.

"He has been taught to think as accurately as a machine. The human brain is theoretically capable of such discipline but the experiment has never been tried before to this extent. Mechandroids, I believe, can solve all human problems, and solve them correctly."

"Machine-trained?" he said doubtfully.

"Machines must serve men. They must free men, so that the capacity of the human brain may be fulfilled. These Mechandroids will smooth the path, so that man may follow the highest science—that of thought."

"There's no danger?" he asked, looking at the silent Mechandroid.

"There's no danger," I said.

CHAPTER XIV

Vega-Born

THEN I was somebody else.

Saturn blazed in the sky above me, blotting out half the firmament, as I fled down the twisting street from the Mechandroid. I had to find somebody who knew what to do. But nobody seemed alive in the city. Nobody but the silent striding creature that was pursuing me.

Homecoming, eh? I was Vega-born. I was sixteen. I'd taken the great jump across interstellar space in the matter-transmitter with my Age Group—nine of them—for the Earth tour and, because all Solar tours start with the other planets, we'd stepped out of the matter-receiver in Titan.

Then everything happened at once, too fast for me to follow. The Mechandroid came running toward us—and we began to fall, one by one. So we scattered. With my usual bad luck, I managed to blunder right into a group of the Mechandroids who were working at something.

They were in a big room, gathered around a table where a body lay. Above the table was a shining web—a neural matrix, hooked up to a matter-transmitter. I knew enough about basic physics to get some idea of what was happening and I stopped right there, like a statue, watching.

The Mechandroids were making a super-Mechandroid—if that's the term. People had talked about the possibility. Everybody, I guess, was a little afraid, because the Mechandroids were plenty smart and if they worked out a collateral mutation—they're individually sterile—why, then, a super-Mechandroid would be horribly powerful and dangerous. For the Mechandroids can be controlled, but a super-Mechandroid couldn't.

They said, not long ago, that they weren't capable of solving certain galactic problems and they wanted to go ahead and build what they called a second-stage Mechandroid. Of course they were forbidden.

But the body on the table before me, under the shining neural web, was a super-Mechandroid in the making. If a thing like that—with all its potential intelligence and lack of emotion—came alive it would be too dangerous to think about.

I turned around and started running again. I kept on running. Once I heard a scream, pretty far away.

If the only way the Mechandroids could build their second-stage Mechandroid was to destroy every human in the Titan city—why, that was the logical solution. So that's what they'd done. I passed an Exploratory Station and took a minute to go in and grab a

vacuum suit. Carrying it, I headed for a gate in the great dome that covered the city.

Two hours later I was sitting on a mountainside half a mile away, looking down on the dome and wondering how long my air would last. I felt pretty lonesome with Saturn dropping toward the horizon and only the dark and the stars around me.

After awhile I saw the ships come. You don't see many ships these days but I knew what they were. Half a dozen of them came down silently out of the blackness and hovered above the city and a moment later there wasn't any city—just a big burst of light and sound and energy.

I sent up my SOS rockets and got picked up. On the trip back I heard a lot of talk about how we were going to get the Mechandroids under tight control and keep them there. Supervision for every one of the creatures. No chance to get together and make a super-Mechandroid.

I guess I didn't enjoy Earth as much as I'd thought. It had been rebuilt and most of the radioactivity was gone. There was just one machine-city left—a museum these days. But the planet seemed small.

Of course we started out from Earth in the beginning. But now we've got the Galaxy.

THEN I was somebody else.

I was Job Paynter.

Every individual is expendable, but the race is not. I am not, but not unnecessarily. My value to the solar community is high. And why not? I am competent in my work —general integration, Seventh Galactic Sector, Earth-based. (I *am* competent, or was until we opened that cavern under the mountain on Earth, and found Job Paynter asleep there. No, I am competent still. Puzzled but able to find an answer when all the returns are in. Meanwhile I must think objectively about this mystery. I *must* think objectively.)

The Mechandroid Belem's desertion should have been reported to me immediately. There is no excuse for incompetence in a world where specialized training begins before birth and where reorientation treatment can be had as often as necessary.

When I investigated Belem's disappearance I was much disturbed to learn how many other Mechandroids had vanished at the same time. I immediately assigned an all-out search, Galaxywide. But I was not too hopeful.

The race moves on. It has its human limitations. The tools we make have no limitations at all. When we educate ourselves to learn to handle those tools most efficiently we can go on to the next step, whatever it may be. Meanwhile there must be check and balance—rigid control.

I assigned to the Mechandroid Belem a problem involving the opening of the Betelgeuse system. I had worked with Belem before. While Mechandroid knowledge and experience goes into a common pool Belem's reactions would be a shade quicker since he had once opened a similar system before, so I asked for him. At that time I was on the Antares base. When I checked later on Belem he had vanished.

We went through the automatic routine. We studied the records and traced Belem's movements up to the moment of his disappearance. We learned several interesting things. Obviously Belem had thought it necessary to disappear in order to solve his assigned problem. So we checked on the problem. The Andromeda system was involved and we discovered that there was something odd, hitherto undiscovered, about the Andromeda sector.

First of all there was a potential nova involved. Secondly, a new type of matter existed on one of the planets revolving about the star that was preparing to explode. It seemed to be a neutral matter, in absolute stasis. We quarantined the system immediately, pending farther investigation.

You never know into what queer bypaths a Mechandroid's investigation will lead. The creatures see factors involved that no human mind would bother with. They're never content with ten decimals but always work down to the absolute quantity. It didn't surprise me a great deal to find recording-tapes in Belem's laboratory which described and localized a terrestrial time-axis.

We went to the point charted. Belem had already worked out a system for displacing the special atomic structure involved and waking the subjects. What subjects? I learned that soon enough.

At the time-axis, which existed not far from the ancient bed of the St. Lawrence River, we found a shell of matter. R-type radiations showed us there were four living beings within that shell. They were in drugged hypnotic sleep. One of them was the Mechandroid Belem. The second was

myself. The others were an unknown man and woman.

My Director discussed the situation with me.

"Belem has been located?" I asked.

"We thought so," the Director said, "but *you're* in the time-axis chamber too. You're apparently in two places at once—so Belem may be as well. You know how dangerous a Mechandroid on an unorthodox problem can be. Don't forget what happened to Titan twenty years ago. Well—obviously four people have, in the past, used drugs and hypnosis to free their minds from time-consciousness as their bodies were freed by the atomic displacement their device has set up around them."

"And I'm with them, it seems."

"You have no memory of it? But they came out of the past—all three of them."

"Circular time? Spiral time?"

"I don't know," the Director said. "It's theoretical so far. The empirical method obviously is to waken these four and find out what happened to them. How they came to be in this time-axis. Certainly a Mechandroid loose in time is too dangerous to be permitted. As for you—"

We had no answer to that, either of us. I was standing here, solid and real. But my double, my other self, was in the time-axis.

"Waken them," the Director said.

That was obviously the next step. The only possible step.

"Very well," I said. It was my job. A job must be completed at any cost. Men are expendable. Mankind is not.

THEN I was Jeremy Cortland again.

We were in the Swan Garden, Paynter and I, looking at each other across far distances. The shadows of a dozen other selves faded and wavered through my mind —and simultaneously I felt a strange sort of mental withdrawal. With the dying remnant of Paynter's memory, I knew the reason. As I had been reading—living in—other minds, so he had been reading my own.

But he did not know that the Mechandroid Belem—DeKalb—was spying through my brain. I felt certain of that, as certain as though—DeKalb—Belem had told me in so many words. No, Paynter might have stripped my mind clean of its memories, but there was one memory the Mechandroid's curious powers had kept from his grasp—the brief adventure I had had, via matter-transmitter, on another planet among Mechandroids.

Abruptly full realization came to me. I remembered the "autopsy" I had glimpsed —theMechandroids clustered about a long table on which a body lay and above which a shining web quivered. Once, twenty years ago, a boy had seen a similar sight on Titan —the creation of a super-Mechandroid, the experiment utterly forbidden through all the Galaxy. A city had been blasted into dust to stop that danger. I remembered, strangely, with another man's memory.

Now it was happening again. A second-stage man-machine was being constructed somewhere on some far planet—and Paynter did not know that, and I could not tell him. The post-hypnotic command was too strong for me. I *could not* betray the secret to Paynter even if I tried.

Which reminded me that Paynter now had my memories. His face was grayish as he watched me.

"That new type of matter we've just found in the Andromeda system," he said. "I know what it is now. You called it the nekron."

Then he must know as well that I was infected with the—the thing, that I was a carrier, a culture for that swift, slaying thing that no grip could hold.

But he did not mention it. Instead, in a troubled way, he began to talk about Belem.

"Belem was set the problem of opening the Betelgeuse system. Which is simple enough. But the Mechandroids are thorough. I suspect that Belem checked all the possible influential factors, and saw that nekronic matter exists in Andromeda on a planet of a sun ready to become a nova.

"When that happens the violent explosion will carry the nekronic atoms, on light-radiations, far into interstellar space—far enough to reach and infect Betelgeuse. For some reason I don't know yet Belem decided the time-axis should be—" He paused, scowling. "Did he leave those notes purposely? Did he *want* us to open the time-axis chamber, Cortland?"

"How should I know?" I asked. "You've got all my memories now, haven't you?"

"I think he did. But where is Belem now?" I knew that—but I couldn't tell him.

"Why did Belem disappear? Why have a dozen other Mechandroids disappeared? Why didn't they announce the problem publicly?"

He had forgotten he was still wearing the helmet. Now he lifted it slowly from his head and I followed his example.

"Because they had to work in secret," he said tentatively. "Now what could they do in secret that they couldn't do with all the science of the Galaxy to help them? There's only one thing. The Mechandroids *must* solve the problems set them—

"They are making a second-stage Mechandroid," Paynter said flatly. "That must be what's happening. Scylla and Charybdis then. For a super-Mechandroid is as certain a menace as the nekron itself."

"But why?" I asked, prompted by a conviction that the devil I knew—the nekronic infection—was far worse than any manlike machine, no matter how perfected.

"Because the Mechandroids would probably obey *it* instead of us," Paynter told me. "The Mechandroids are vulnerable because they're partially human. A second-stage type probably wouldn't be. When you consider the knowledge and skills the Mechandroids already have—and if they're applying them to the creation of a mutation of their own—why, such a monster could easily be invulnerable. Suppose it worked on absolute logic? *That* might call for the extinction of all life-forms! I don't know. No one knows. How can anyone think like a mutation from the Mechandroid type?"

I shook my head. "Don't ask me. I've got my own problems. Those four asleep in the time-axis. There must be an answer somewhere, Paynter. There must be!"

"There is an answer." He said it so soberly that I felt an instant's chill in my own mind. I had good reason to feel a chill. Paynter went on in a very somber voice. "Now I'll tell you the truth, Cortland," he said.

CHAPTER XV

Crumbling Flesh

THE four silent figures lay deep in their age-old slumber in the chamber under the mountain. I saw them there again. I could feel the weight of the helmet on my head and I was this time fully aware of the Swan Garden around me and the sound of Paynter's breathing at my side. But I was seeing the projection of a three-dimensional film. I was looking into the chamber as a camera's eye had looked.

"This is the official record we made when we opened the cave," Paynter said invisibly at my elbow. "Now watch carefully what happens. No one knows this but you and myself and the few technicians who were on the spot. We've kept it quiet. It's so—so—well, watch and you'll see."

Nothing moved in the cave. Nothing had moved, I suppose, for a thousand years or more, not since all motion ceased when we sank into our long slumber. But now lights began to flash from beyond the gray egg of nothingness that walled us in. Paynter's technicians were at work, trying to break that shell, trying to hatch out—what? Something terrifying. I knew that by the tone of Paynter's voice.

The lights flashed and faded, glowed again, paled. Now the camera drew back and I could see Paynter himself, standing beside a group of workers and a battery of machines. All were intent upon the egg of time that held the sleepers.

It was curious to hear Paynter speak then—the Paynter of the cavern, speaking in the film, not the Paynter who sat beside me. Duplication piled upon duplication.

"What are the chances?" I heard him ask. "Are they going to wake?"

Murmurs answered him. After awhile, during which his eyes were very thoughtful upon the sleepers and upon the woman among the sleepers in particular, I heard him say in a musing voice, "We should have one of the entertainers here. If this is actually a time involvement, as you say, then these people will have been asleep a long while and they'll feel bewildered when they wake.

"We need someone like—like—yes, Topaz—to speed their adjustment." (I knew why he had thought of Topaz. I knew he had seen, without realizing it, the face of Topaz implicit in Dr. Essen's sleeping face.)

"Send for Topaz," he said firmly, his voice echoing in the cavern as ours had echoed once, a thousand years or many thousands of years before.

(Now perhaps this is as good a place as any for a word about the language he was speaking. It was certainly English but not as familiar a language as I write down. Any living tongue rapidly accumulates new words and phrases, drops old ones, assigns new

meanings to words already in use, so that the colloquialisms of one generation are gibberish to the generation before it.

The English we were speaking was changed, not a living language. Matter-transmission had spread civilization over a vast area and some common tongue was a necessity, but it couldn't be a tongue that changed or it would soon cease to be a common language. So it wasn't easy to follow what these people said around me—but it wasn't impossible either.)

The camera ground on for about thirty seconds more and then blurred briefly. Beside me Paynter spoke in a quick, impatient voice.

"Skip all that. It's just more experiments. This was the period when they completed the analysis of the clothing and established the period from which it came as mid-Twentieth Century. It was about six hours after that before they breached the shell of force. I was notified and I sent for Topaz and came in myself for the finish. Now watch."

The cavern took shape again before me. Clear in the bath of what was probably ultraviolet, because it brought the images out so clearly, the four sleepers lay. But this time there was a hum of activity around them. Men passed before the camera, obscuring it now and then, carrying lenses and long glowing tubes and angular things a little like sextants. I heard Topaz's sweet high laughter and Paynter's rebuke.

"Watch," Paynter said beside me. "It happened very suddenly."

AS HE spoke, I saw the change begin. It was like a cleavage in space, a widening crack that spiderwebbed across the empty air like a riven bubble of plastic. The sleepers showed for an instant, distorted as though seen through a shattering substance with a different refractive index from air.

Then the cavern darkened for an instant. The four bodies seemed to spring into more dimensional reality—I sensed that their clarity was not due to the ultraviolet bath. It was as though a stereopticon image had become tangible. For a flashing second the four figures became part of—normal space. The shell of energy Dr. Essen had created so long ago no longer prisoned them beyond space and time.

The place grew darker still. It gave me a feeling of inexplicable urgency. I was on the verge of remembering something—that reddish twilight with faint lights twinkling through it was—was—

My thought paused. For the bodies were—crumbling.

I had a second of horrible, sickening terror, as though I felt my own flesh falling into dust too. Instinctively my fingers tightened on my legs. It was bewildering to feel my own flesh firm beneath my hands while before me in the projection I could see the same flash crumble from my bones.

I watched myself disintegrate in the red twilight that had filled the cavern, fall swiftly into dust as if the thousand years of time we had cheated as we slept were taking its toll all in one final moment. But I knew that was not the answer. Living flesh does not crumble like that and we had been living until the egg broke around us. There was some more terrifying solution than that.

Suddenly, in my bewilderment and terror, I knew what the answer was. That shadowy red twilight, with lights faintly flashing across an empty world—I had seen that dusk before. In that same twilight I had seen the Face of Ea looking out over the world's night. That crumbling of our flesh into dust had been no accident.

I knew I had watched the four of us murdered in our age-long sleep, deliberately dispersed into nothingness—by what? By whom? I had no way of guessing, but it seemed to me the red twilight that filled the cave indicated something of an answer. Nothing was happening to us at random, I knew fully in that moment of revelation. It was planned, deliberately planned—and by the people of the Face?

They had summoned us across the millenniums. Had they planned our shipwreck here on the strand of some middle future and then, with calm intent, scattered our dissolving bones upon the cavern floor, having used and finished us?

No, for we were still alive.

Only *I* remembered my own identity clearly, but I was sure the icily violent ego of Murray lay buried somewhere beneath the surface of Paynter's mind. I had looked into Letta Essen's eyes in the lovely face of Topaz. DeKalb must linger somewhere, submerged but waiting, behind the metal eyes of Belem. So we were not dead.

The dust that had been ourselves ceased its crumbling and falling and settled into long, roughly man-shaped mounds on the floor of the cave.

"That happened coincidentally," Paynter said with elaborate detachment. "But something rather odd took place at the same time. Look."

The scene changed. The focus had shifted to another lens on the far side of the cavern. In the foreground Paynter stood, behind Topaz. Their faces were intent and horrified as they watched the egg begin to crack.

The film had stepped back sixty seconds and I was watching again the first beginnings of the disaster inside the shell of time. That curious riving of the air began again, the red twilight glimmering through, repeating itself as it would repeat endlessly whenever anyone chose to play this recording over.

But now, as the bodies began to crumble, I saw a change slip across Paynter's face. I saw it go blank, then suddenly go quite bright with a blaze of awareness—and then totally blank.

His knees sagged. He folded up and dropped limply forward. Someone jumped to his side from the crowd at his back, caught him and eased him to the dusty floor. As he fell I could see beyond him the small, brightly colored body that was Topaz, collapsed without a sound.

There was milling confusion around the two for a moment. Then Paynter stirred and the crowd backed away a little. Paynter sat up, consciousness returning visibly to his blank face. Topaz, beside him, stirred and moved her hand, lifted it and, with her eyes still closed, brushed the clustering curls from her face with a curiously innocent vanity.

At my elbow Paynter said, "All right, that was that. A moment's faintness. Neither of us suffered anything worse. But let's go back again to the moment the shell cracked and Topaz and I fainted. There was a crowd outside, waiting to see what would happen. You'd be surprised how easy it is to draw a crowd. They didn't take long to assemble, via matter-transmission, once word got out. Some of our other cameras caught an interesting detail or two."

NOW I saw a rolling slope thronged with men and women. Figures were toiling up from a plain below, where last I had seen the forests of northern Canada stretch unbroken. In the far distance a low white building gleamed in the sunlight among orchards.

"That building," Paynter told me, "is the Kerry Plum Orchard transmitter. All these people came through it. They came from all over the galaxy, of course. No way to trace where they started from. Which is a pity because—well, look."

I looked—and saw my own face.

Duplication doubled and redoubled. My head swam as I tried to realize it, to count up how many Jerry Cortlands were in existence in this one space and time. One had fallen to dust in the cave. One sat here in the Swan Garden beside Paynter. One strolled up the hillside toward the cavern, casually, through the crowd. It was myself, all right. I wore rather ragged shorts and a tattered pullover.

I turned left around a rock with part of the crowd and then there was a sudden humming excitement all over the hillside and a flash of reddish light from the cave.

"We've gone back again to the moment when the bodies began to disintegrate," Paynter reminded me. "Down in the cave Topaz and I are collapsing. Up here—watch yourself."

I saw the same look of dazed wonder melt into blankness on my pictured face. I saw myself fall.

"When you woke again," Paynter was saying, "you were in the transmitter room by the City. Topaz was with you. That was when your memories started. Remember?"

"You mean—*that* was me?" I demanded. "That man who came with the crowd? The *me* sitting here now? Oh no, that isn't possible! I remember! I went to sleep in the cave in the Twentieth Century and woke here. I never came out of a transmitter and joined a crowd in the Laurentians. You told me you'd wakened me in the cave!"

"Not exactly, no," Paynter said. "I just gave you your head. There was so much here that nobody understood, you see. I wanted you to go your own way until I knew all I could learn from you. Then I told you the truth. What could be fairer than that?"

"But I'm not that man on the hillside! Who was he? Where did he come from? He isn't *me!*"

"Well, you're that man. You saw what happened to the bodies in the cave. Your duplicate, my duplicate, Belem's, the woman's—they all disintegrated. As for who you are, I don't know. It's odd but not unheard of. With galaxy-wide colonization there must be a good many people in stray corners who have never been registered. You're one of them.

"We tried but there's no record of your prints and history. However, you *are* the man who fainted on the hillside. It took you longer to recover than it did us and when you woke you called yourself Cortland and you've just given me some very fantastic history. Which rings true, incidentally. You believe it. You aren't faking."

"Of course not. I was in the time chamber with the others. I—"

"You fell to dust, I suppose." Paynter's voice was impatiently amused. "Wait a minute. I thought I noticed something in the crowd near you. Hold on."

I felt him move. The picture flashed on before me, picked up again the scene on the slope. Paynter gave some orders in an undertone, and the camera paused, halting in mid-stride a man who had just entered the edge of the picture.

It was De Kalb.

No, not De Kalb—Belem. He turned his face to the camera and light glinted on the quicksilver eyes.

The daylight flashed suddenly red again. The crowd nearby surged, chattering around me—my duplicate—as he fell. And Belem staggered. You could see the cold resolute Mechandroid brain gather itself to resist whatever assault this was upon its integrity. And the Mechandroid succeeded where the merely human had failed. Belem stumbled a little, leaned against the rock I had seen myself circle a moment before in the film, slid down so that he half crouched against it, his face in his hands.

Then quietly, in about a quarter of a minute, he rose and walked back toward the Kerry transmitter, moving stiffly even for him, his face bewildered.

Paynter was saying in my ear, "So that's where he was!" But deep in the center of my mind a stirring of surprise gathered all my attention. Belem was watching too. Belem was thinking in almost the same words Paynter used, *"So that is what happened! Now—now I almost understand."*

CHAPTER XVI

The Subterrane

THERE was silence in the Swan Garden for a long moment. Then Paynter lifted the helmet from my head and stood looking down thoughtfully at me. The crystalline bower came back around me. I was looking into Murray's face but it was Paynter, from Colchan Three and this middle future, who spoke.

"There were four asleep in the cave," he said. "There were four who blanked out for a time when the sleepers disintegrated. That must mean we living four were duplicates in more than appearance to those who were destroyed. I don't understand, of course.

"The integrating machines are working on it now. Eventually they'll hand us all the factors and their conclusions. Meanwhile, Cortland, I think I caught an impression of yours while our minds were in rapport. Is Topaz a duplicate of that woman in the cave?"

"Dr. Essen," I said. "I think she is. Yes." But silently, to myself, I was thinking, "They all have identities but me. I'm myself. And yet I saw Jerry Cortland dissolve. That must mean that I'm the nameless man, the one who came up the hillside from nowhere and fainted. When he woke up, he was Jerry Cortland—*me*. And I'll never dare sleep in this world for fear that when I wake I'll be—him. Not myself. I saw myself disintegrated in the cave for a purpose, by some means I don't understand. I'm dead. When this man wakes up, I'll—"

"All right, Cortland," Paynter said briskly. "I'll leave you here for an hour. You'll be quite safe, of course. Topaz will rejoin you in a moment or two."

"Am I a prisoner?" I asked.

"Well, no, not exactly." He gave me a grim smile. "You want the same things we do, I suppose. An answer to all this. I'm assuming you've told us the truth. I'm as sure of that as it's possible to be. Of course you may have powers you've been able to hide from us, so we'll keep an eye on you until we know more. Topaz will bring you to me in an hour. By then I hope we'll have an answer from the integrators."

He gave me a stiff salute of farewell and turned away, pushed among the lacy palmetto growths and was gone, presumably into the matter-transmitter. I couldn't understand why he hadn't killed me.

For there had been five in the time-axis, not four. And the fifth was the most dangerous thing ever let loose upon a galaxy. The nekronic killer had come out with me. How, I could not guess, if it were true that I was not Jerry Cortland, but a nameless man from

the hillside below the Laurentian cavern. The infection was not in the flesh then but in the—mind? The *memory?* At any moment I knew I might feel that blinding shock thrilling through me, the exploding burst of energy that meant another death.

Paynter knew. He had read my memories. He wasn't top man, of course. When his findings were integrated the orders might be simply, "Kill Cortland." It's what I'd have done in their place. It was only logical.

So they expected me to wait, did they? Wait for what, the firing squad?

Well, maybe I wouldn't do it. I felt like laughing when I remembered how complicated life had seemed back in my own day. There I'd had only one time, one space, one Jerry Cortland to consider. And even then I'd been on the rollercoaster with a splinter in the seat of my pants. Now Jerry Cortland was dead. He was lying in a heap of dust in a cavern somewhere on another planet for all I knew.

Illogical? Oh, sure. For now I was up against something too big for the human mind to comprehend, really and—irrationally, I felt cheerful.

I saw another of the pale green oranges floating along the stream and plucked it out deftly, sank my teeth into it. It *was* alcoholic, in a mildly exhilarating way. I let the tingling juice run down my throat and—

"You are in great danger," a voice in my brain said coldly and suddenly.

I clapped my free hand to my head and pressed the bone beneath the skin in some primitive impulsive attempt to massage the devils out of my brain. He was there—De Kalb, Belem—with his cold metal gaze looking out through my eyes and his cold metal thoughts moving through mine.

"Can you read my mind?" I asked, all but vocally, making the question clear in the front of my mind.

"No. Only when you put your thoughts as clearly as this. Please try to keep them clearer. That fruit you are eating—it fogs the mind. Throw it away. I must consult you now."

DELIBERATELY I took another deep bite of the alcoholic orange. No one had invited him into my mind, I thought somewhat incoherently, the Swan Garden looking pleasantly blurred before me. I had no real reason to trust either De Kalb or Belem. I didn't like the way the Mechandroid could crawl into my head, pull up a chair and settle down for a free sight-seeing trip.

If it worked the other way now—I'd enjoy a quick round-trip through Topaz' mind, for instance. She was not only lovely but unpredictable as an ocelot. I'd have given a good deal to look into her mind. I imagined it would surprise me. And as for Paynter—I knew his type. He had that conviction of absolute rightness that makes fanatics. He hadn't left me entirely on my own, I was pretty sure.

"Drop that fruit," the voice in my mind said. *"Drop that fruit."*

I didn't intend to. I started to flex my elbow to bring the orange up for another bite—but my muscles weren't working very well. They weren't working at all. My arm went lax, my fingers turned into putty and the orange fell with a splash back into the stream. Regretfully I watched it bob away.

"Do you see that purple fruit?" the inexorable voice inquired. "There, coming over the bend. Catch it."

I decided to do nothing.

I found myself plucking a purple object shaped like a cigar from the stream, lifting it to my mouth, biting off a section. It was succulent too, but astringent. The giddy elation began to leave me. More soberly I took a second bite.

"Very good," Belem's disembodied voice said. "I don't want to work that hard again. It isn't easy to do this. You may need all the strength I can give you sooner than you think. Don't make me exhaust myself fighting you."

"How do you work it?" I inquired with the front part of my consciousness. "Where are you, anyhow? Isn't it crowded in there? Look out for the left lobe—it's slippery."

"That is probably humor," Belem said coldly. "Wasted on a Mechandroid. I have no intention of telling you how I do this but there is no reason why you shouldn't know where I am. Exactly where you saw me last. My body remains in stasis while my mind is in close rapport with yours.

"I can see and hear and feel everything you do. I can read your clearer thoughts. I can, with a great effort, control your motor reflexes for a brief time. Whether you like it or not your fate and mine are now linked until I can effect a separation again."

"For better or worse," I said wildly. "For richer or poorer—I see another orange com-

ing along, shall we have one together?"

"Finish that purple fruit," Belem ordered, "You may need another. I am going to take you through the transmitter now to a certain underground region whose existence we have suspected for a long while. I learned its location during your rapport with Paynter.

"It is a highly secret place but together I believe we can enter it and perform an important task. I believe it will in the end be as important to you as to us. In some way none of us yet understands your destiny and mine are linked through that time-axis where we both have slept. We—"

"Don't forget Paynter was there too," I reminded him.

"I know. I've explored your memory along with Paynter. I know all the essentials now and I believe I begin to get a glimmer of the pattern. Our first task is to visit the Government Subterrane. If you will turn to the left now and go back along the path to the transmitter room—"

"Why should I?" I was feeling sullen as the exhilaration died in me. "This is my brain, not yours. I have my own problems. Go crawl into somebody else's mind or do your own dirty work. I'm in enough of a jam right now with Paynter, or I will be when—"

"When he realizes that you are a carrier for the nekronic killer, exactly. Paynter will not hesitate to sacrifice you when the time comes. When it does you and I will be at a safe distance, with the object I mean to get in the Subterrane. Now will you go or must I force you?"

I STARTED to speak—aloud in my anger—but before the words could come there was a ripple of self-conscious laughter among the star-shaped leaves and Topaz swept forward through the fronds and spun around before me.

She was covered with spangles, glittering, dazzling, flickering, all colors, clinging to her skin, her hair, her floating veils.

"Oh, how beautiful I am!" she caroled, with an air of innocent vainglory. "Tell me, did you ever see anything so beautiful before?"

"Never in my life," I assured her. "It's—"

My jaw snapped shut on the last word. My muscles tightened and without the least conscious volition I found I had turned my back to her and was marching down the path toward the matter-transmitter. In my brain a cool, metallic mind seemed to be saying with an intonation of despair, *"Human beings!"*

It was interesting to watch my own hands manipulating the buttons that selected the proper wave-bands for our destination. The process looked far too simple—there were only half a dozen buttons in all—but I assumed the Mechandroid, gazing through my eyes, tightening and releasing my muscles, knew what he was doing.

He did. The room shimmered before me, disorientation and brief nausea shook us both together in gigantic oblivion and—

WE EMERGED into a large underground concourse—I think it was underground, it sounded and felt like it—thronged with busy men and women who paid me only the slightest of glancing attention as I pushed among them, half guided now and half of my own volition. There were people here in costumes so various that I suppose my own clothing was no more outlandish than anyone else's.

I think this was a nexus in the great web of matter-transmission, under the surface of what planet I have no idea.

People from colonies all over the Galaxy must have changed stations here. I know I attracted no attention as I hurried through the cosmopolitan crowd toward a row of transmission rooms in the center of the concourse, closed the door behind me, manipulated more buttons.

It was curious, I thought to myself as the familiar disorientation swam through my brain, how little I was seeing of this marvelous world of the middle future. Topaz had assured me that cities were obsolete and mankind lived in luxurious isolation wherever his fancy dictated.

Yet all I had seen so far, except for the Swan Garden, had been the underpinnings of the culture, the girders upon which its farflung luxuries were builded. What lay aboveground, on the flowering surfaces of the planets, I was not to know, then or—perhaps—ever.

The room steadied about me. The door slid open.

I looked down a long corridor bathed in white light.

"This is the Subterrane," Belem's voice in my brain said.

CHAPTER XVII

The World of Belem

HAD I been expecting something semi-miraculous I should have been disappointed. I had seen similar passages under Grand Central Station. Here there was nothing at all unusual—simply a white corridor, empty and silent.

"In your day," the Mechandroid told me, "this would have been a grouping of thick doors and locks. The Subterrane is the arsenal of the government. It isn't on Earth. Walk forward."

I obeyed. I felt a brief tingling, a rather pleasant vibration that passed and was gone.

"You have just passed between a cathode and anode that would have disrupted the brain of any Mechandroid. The pattern is keyed so that it's harmless to humans. No Mechandroid has ever been permitted in the Subterrane—till now."

So they were vulnerable after all.

"Why, yes," Belem remarked, surprised. "Every existing thing is capable of negation—of altering its condition to non-existence. The less adaptable an organism, the easier it is to destroy. But this cathode-anode device is not portable and its field is quite limited.

"It is useful only for defense—not for offense. You would be destroyed, too, if you hurled yourself on a sharpened stake. The other devices are aimed at human beings who aren't wearing the protective helmets. Luckily—"

I wasn't in a corridor any more. Not a normal corridor. Planar geometry had suddenly and empirically been disproved. My eyes, conditioned to normal perspective, went dizzily out of focus as abruptly as gravity itself seemed to alter.

You can't describe the indescribable. Lines of perspective meet at the vanishing point—sure. So they say. But the walls and floor and ceiling of the white-lit tunnel curved in insanely a few feet ahead of me, *crossed* somehow and re-extended themselves toward me like a tapering cone. Such distortions of matter may be normal at the end of the universe but you shouldn't be able to reach out and touch—

Touch? But I couldn't even do that. Gravity had gone wrong, too. I suspected there was a riptide in the semicircular canals of my ears. Because I felt that I was falling, no matter in what direction I looked.

There was no corridor. There was only white emptiness. Dead white and featureless except for the cone that pointed accusingly at me. I tried to move forward and a horrible, sick, giddiness loosened my muscles and then tightened them again as I strained to stand rigid. As long as I didn't move an inch I might not fall.

"Walk forward!" the voice in my mind insisted.

I shut my eyes and walked forward. At Belem's annoyed command, I reopened them and either fell or ran toward the white cone that was the corridor itself extended beyond infinity and in geometric reversal. As I moved I found myself curving away, along the line of the distortion, so that without knowing how it had happened I was hurrying in the opposite direction with my back to the cone.

"I can't do this too often without resting," Belem said. "Open your mind. Relax. Let me control your muscles. This illusion is for human eyes only. I can screen it out and see the right way."

It took tremendous effort on my part to keep my eyes open and my muscles relaxed. That disgusting falling sensation kept growing stronger and every sane instinct I had reacted violently at what my optic nerves described. I was walking into a vanishing point—that was the only way to describe it. I walked right into the point of the white cone and through it—don't ask me how, because it was an illusion—and then I was in the white corridor again.

I took ten unsteady steps, and came out into a wider tunnel that stretched, curving, to left and to right. Belem guided me to the left.

THERE were hieroglyphics on the walls at regular intervals but I didn't realize they indicated doors until the Mechandroid told me to stop. All I had to do was touch the wall and a shutter opened like a cat's-eye, slitted, then oval, enlarging till I could step through into the room beyond. Behind me the panel closed noiselessly.

It was a large room and there was a matter-transmitter in a corner. The walls were banked with paneling carrying the most complicated set of controls I had ever seen. On

a glassy pillar in the center of the floor was a transparent box, small enough to hold in my palm, and it was bathed in a sparkle of glittering lights that poured out from two pencil-like cylinders embedded in the pillar, one on each side of the box.

Within the box was a golden marble.

"I know," I said dizzily. "It'll grant me three wishes."

"That type of humor is a defense mechanism against fear," Belem told me unsympathetically. "Here is the main reason why I chose the difficult and dangerous method of entering your mind. No men of this age would have gone with me this far. They're all conditioned against Mechandroids.

"You were the only one who could and would have got into the Subterrane. In that transparent box is, I think, the only weapon against which we have no defense at all. As long as it's within the field of radiation, as it is now, it's harmless. Remove it and, within two minutes, it becomes activated."

"What is it?"

"A complicated pattern of energies. It's positively charged now. When it's activated, it becomes negatively charged. Then it creates a dead field for nearly a mile around it, in which no matter-transmitters will operate."

"That doesn't seem so dangerous. You can get along without matter-transmitters long enough to walk a mile, can't you?"

"Not if we're under siege. You saw our laboratory. Warfare is still a matter of siege unless one wants to wipe everything out and they don't. They'll want to inspect our work. With matter-transmission you can't besiege a place.

"Everyone inside would simply leak away and escape, taking all their important work with them. This one weapon here is the only completed matrix available at this time. It takes a long while to complete the necessary energy-pattern. So, if we eliminate it, we can stand off a siege long enough to clear out the laboratory."

"Eliminate it how?"

"Set the matter-transmitter controls to—anywhere. Some obsolete receiver at the edge of the galaxy, maybe. Pick up that box and—*fast!*—put it in the transmitter, before the radiation dies and it activates. Then the box will appear at the edge of the galaxy and paralyze energy facilities there."

"For how long?"

"I don't know. Long enough. It wouldn't harm humans but they'd have to walk to a station outside its field. The box can't be moved, incidentally, or you could just carry it to a spot beyond the range of the nearest transmitter. After it's activated it has almost absolute inertia. Right now, though, it's portable. Can you touch it?"

I put out a tentative hand that was stopped in mid-air about a foot above the box. I pushed against nothing. I couldn't pass the invisible barrier.

"I thought so," Belem said. "That stud in the pedestal—try pressing it."

I did. I reached for the box again. This time I could do it. The defense field, whatever it had been, was gone. The box was not very heavy. I set it down again with care.

"All right," I said. "Fine. But what about me? Why should I help you?"

"Paynter will kill you if you don't," Belem said patiently. "If he doesn't his superiors will as soon as it's established that you're a carrier of that nekronic killer, whatever it it. And I think I know. If you help me I believe I can solve that problem too.

"There are two obvious reasons why I'll protect you. First, I can't get out of your brain until you're in physical contact with me again. If you're killed before then the psychic rapport impact may kill me too. After we finish this job you'll get in the transmitter and return to the world where I am now—the one where you first saw me. As for the second reason—"

A SUDDEN, violent contraction of all my muscles, like a simultaneous cramp in every limb, doubled me up without the slightest warning. I fell forward—saw the floor hurtling toward me—and felt my rebellious muscles relax again just in time to save myself from a crash. I was so startled that I scarcely noticed the lance of gauzy light, tendriled like a cobweb, that floated in the spot from which I had just been hurled. But Belem's thought said, *"Paralysis projector!"*

What happened after that took almost no time at all.

When I got my feet under me I whirled and faced the opened door-panel and the man standing there in arrested motion, weapon lifted. It was Paynter, his pale eyes glittering, his mouth drawn down in a grimace of anger and surprise. The weapon had a basket-hilt and a muzzle that looked like rubbery lips, puffing in and out petulantly.

Belem had sensed his presence before I

did. It was the Mechandroid's control of my motor reflexes that had jerked me forward in a spasmodic dodge that barely cleared the blast of the puffing weapon.

I had no weapon of my own. Paynter was centering his on me for a second, more accurate shot. It hadn't the ghost of an idea how to avoid it.

"What do I do now?" I demanded in desperation of the mind in my brain.

"I don't know—be quiet, I'm trying to think!" was all Belem had to offer.

I sought Paynter's eyes, trying to put hypnosis into my own, saying, "Now wait a minute, Paynter! Hold on! I—"

He did not answer in words. He raised the weapon and took deliberate aim at me. I wondered whether he had been following from the first, how much he knew—why he chose to kill me now, without hearing a word of defense. He wasn't even curious about how I'd got here.

The puffy mouth of his weapon sucked in deeply and began to pout out again. In another second a web of light would shoot out at me and there was no room here even to dodge again, without colliding with that pedestal upon which the marble in its glass box rested. If I dodged I'd hit it.

If I dodged I'd—

That was the answer, of course. So obvious neither of us had seen it. It was the simplest answer in the world. I almost laughed as I snatched the glass box from its resting place and, in the same quick motion, hurled it straight at Paynter's face.

No one can say he wasn't fast. His mind recognized the danger I had dropped in his hands in the same instant his muscles reacted. There was only one possible thing to do, and he did it. He dropped his gun and caught the precious and terribly dangerous box in mid-air.

I didn't stop to watch. I was already halfway through the door of the matter-projector by the time Paynter's weapon hit the floor. I slammed the door shut with one kick and put my hands on the wall where the dials were.

"Belem!" I thought urgently.

On the other side of the slammed door, Paynter would be rushing the box back into place, back into its bath before the two-minute interval elapsed that would activate the thing and stop all matter-transmission for a cubic mile. If he fumbled it I was stuck here—unless Belem moved fast.

Luckily he moved. My fingers, without my own volition, were hastily spinning the verniered dials. Tarnished metal walls flashed into view around me.

CHAPTER XVIII

Space Wreck

BELEM said, "No, we're not going out. We're in the transmitter of an abandoned space-ship around Centaurus II. We located it from our laboratory years ago. We know a good many of these out-of-the-way transmitters, useful in cases just like this. I can't set the controls to take us directly to my headquarters or Paynter could simply read the dials and follow us as he did from the Swan Garden."

I found I was breathing heard. The Mechandroid said we'd have to hurry. "We transported several cubic yards of air with us but that won't last long. Here, let me—"

I watched my hands move deftly on the corroded dials. I had one dizzying moment in which I thought of the terrible deeps of space all around us, the dead ship circling an alien star-group while our last air seeped out around us into the infinities of the dark.

Fortunately for my own sanity, I had very little time in my turbulent hours in this middle future to pause and think. I had been catapulted into a culture so different from my own that my mind could not, I think, have endured the concept of those vast spaces which everyone here took as a commonplace. It was only in the small, unchanging superficialities of the culture that I could conceive of it at all.

The walls shimmered, blurred—were translucent metal through which I could see a circle of bright green grass and a ring of low-roofed houses whose eaves turned up like Chinese roofs. The only living things in sight were a pigeon, flying low and trailing a red ribbon in its beak, and a dog who ran below, jumping to catch the ribbon now and then. I could hear it barking.

"Hurry," Belem said and my hands found the dials on the clouded transparency of the wall. These dials were set in rings of colored tile but they worked like any other dials. I turned them, the room blurred . . .

I had had no idea there could be such a

variety of transmitter-receiver rooms. Few of them had transparent walls, so that I had to guess what lay outside, but the rooms themselves ranged from functional steel boxes to padded lounges. Several times they swam with the perfume of exotic unknowns who must just have stepped out after a trip from—who could begin to guess where?

And once two wilting flowers the size of dinner-plates and colored a deep plushy crimson lay on a glass floor where some traveler had dropped them, stepping out. They went with us through four transitions and we left them at a fifth when Belem said at last, "Here we'll get out. It's another concourse. I think we'll be safe now if we take a long jump to my base laboratory. Open the door."

Like the other concourse it reminded me vividly of the Times Square shuttle. Crowds hurried across vast open spaces, vanished into cubicles and poured from other cubicles in an intricate mesh of movement that linked a whole galaxy together.

"See that row of doors with the blue lights over them?" Belem said. "Try to find an empty booth. I think the third from the end—"

A door opened as he indicated—with my own hand—which one he meant and a fat man in a long furred cloak upon which snow lay in still unmelted crystals came bustling importantly out, beating his cloak as he came.

I stepped in, closed the door, avoiding the puddles of melting snow which the fat man had tracked in from some world I couldn't imagine. Perhaps Earth.

"These rooms would be a fine way to spread disease, wouldn't they?" I asked Belem as I reached for the dial. "No telling where this snow-water came from, but it'll go along with us, I suppose, and we'll track your laboratory with melted water from Neptune or Canopus or—"

"It is most unlikely," Belem began pedantically in my mind, "that you would find snow—"

"Okay, okay. Forget it." I had just uncovered a disturbing thought. I was a carrier of disease myself. Had I been sowing the nekronic death on a dozen worlds already, leaving the virus in transmitters for those who came after me to carry still farther abroad?

"There is no way of knowing that yet," Belem said. "Turn the dials."

I did.

It seemed to me that this time the vibration of the transmission was a little longer and more violent than before. I wondered if we were going an unusually long distance. Then the room steadied again and I pushed open the door.

I expected the laboratory, enormously braced, enmeshed with catwalks and, sparkling far across the room, the bright neural webbing that meant the dangerous man-machine was in the making. Perhaps Belem's motionless figure would stand there waiting beside the door.

I looked out into the seething concourse we had just left. The fat man in the snowy cloak was only a dozen paces away in the crowd. We had not stirred from this station.

"Try again," Belem said in my mind, after what seemed a very long pause, full of strain.

I tried. The room shook and blurred, steadied.

I opened the door.

THE concourse was still there. This time the fat man had almost vanished in the crowd though I could still see his fur cloak swing out as he dodged to avoid a group of adolescents with bright knapsacks on their shoulders, bound for—what resort world in what distant corner of the galaxy?

"Shut the door," Belem said. I got a feeling of tight-reined control from his mind superimposed upon mine. He was frightened, trying to keep panic down. "This is very simple," he said, perhaps as much to himself as to me. "The receiver in our laboratory is no longer working.

"It can mean only one thing—Paynter must have known all along where we were. Or he had access to those who did know. However he found us he must already have sent the weapon ahead." He didn't name the weapon, but I caught his mental picture of the golden marble in the glass box.

"All right," I said. "That lets me out, then. We're finished."

"Not at all." Belem's thought was sharp. "We must find the nearest receiver to the laboratory that works. It will be somewhere in the city. Then we must walk. There are secret entrances the government can't possibly have found yet. After all there hasn't been time for much to happen. But I *must* get back to my body and you'll be safer with

us than with the government."

"It looks more to me as if we'd be safe in jail together," I said.

"Try the dials again," was all Belem replied.

Someone was knocking impatiently on the door of the cubicle as the walls shimmered again and the long stretches of infinite space drew out between this world and the nameless place of the laboratory. I suppose the particles of my body dispersed along that path and reassembled again. I never did know much about how it worked. But when my head cleared I was in another room, smaller, square, smelling of machine oil. I opened the door.

THIS was it. I remembered the strange, pale daylight, the bands of thin borealic light across the black sky, the double sun swinging far off and not very bright above the time-ruined city.

But it was a very busy city this time. Men in uniform were hurrying through the streets in low square cars that floated without wheels, quite fast. Groups of them flickered and materialized and groups flickered and were gone at the transmission-centers which were this city's transportation system. Far off over the rusty roofs a cone of blue-white light, blinding in that dark daylight, seemed to clamp down over something at the city's edge—I could guess what.

"Hurry," Belem said in my mind. "Out here, around the next corner and step on the black disc in the pavement. If you move fast I don't think anyone will recognize you, though a cordon must be out for you by now. They'll expect us."

"Me, not us," I said, dodging through the doorway. "I wouldn't be surprised if Paynter let me go and then trailed me with the idea I might lead him to you. He'll have a lot of explaining to do now that I'm missing. But he can't have guessed you were there—more or less—all the time. Here's the disc. Now what?"

"Step on it," Belem said. "The dark half."

The circle was six feet across, half dark, half palish.

The pale half was unmarked, but the dark half had an arrow inlaid in it which was pointing right.

I stepped gingerly on the arrow.

I was standing on the pale half of a large disc. But not the same one. The buildings were different around me. A carload of soldiers drifted rapidly past toward one of the bigger discs, floated over it, centered and vanished.

"At the next corner," Belem urged me. "Take the dark half again. Hurry!"

Leap by miraculous leap I traversed the dark clear air of that curious city. And as I went it seemed to me I began to get a glimmer of the decoration which had once made it spectacular in its heyday, something one couldn't see from a single standpoint but grasped bit by bit as one went through great arcs and vistas of its streets.

One bit at a time showed nothing but each leap through space, each glimpse from a different point, built up a little more of the plan in the memory, so that eventually a strange concept of the art emerged, a step farther than the architecture of my own day, when solids and surfaces were used. Here movement and distance were of equal importance. Like a moving picture, except that it was the city which stood still and the watcher who moved.

PRESENTLY Belem halted me. We had come out near a fenced enclosure full of hulks of junked machinery, floating cars that still hovered motionless just off the ground, all their ribs showing, small lifeboats from beached spaceships, odds and ends of jetsam wholly nameless to me.

"Over there, the little ship under the girders," Belem said. "Make sure nobody's watching, then climb into it."

I did, wondering who had last sat in the tattered leather bucket-seat before the instrument panel, what he had seen through the glass, what wrecked liner and whirling stars. Belem interrupted the fancies impatiently. Under his orders I pushed the seat aside and pulled up a trap in the floor. A ladder went down.

Nobody had discovered this passage yet, though I expected to find at any corner that somebody was waiting for me with a paralyzer that puffed rubber lips in and out. At the end I tapped a signal on a metal door and after awhile someone pulled it creaking open.

The gigantically braced laboratory was blue with smoke and bluer with the blinding light of the cone that hung above it, glaring through the broad windows.

Belem's motionless figure waited where he had left it.

CHAPTER XIX

The Marble

IT WAS curious to look into his face and find it alien, he who had been so intimate a part of my mind. The emotionless features, the strange, quicksilver eyes belonged to De Kalb but the voice was—as I pointed out to him—the voice of Esau.

He wasn't amused. He seemed to find his own body rather strange for a moment or two, for after he had left me he tried it out stiffly, moving to and fro with short steps.

"You look like De Kalb," I said, watching him. "You move like De Kalb. Belem—*where is De Kalb now?*"

He gave me a swift, strange, emotionless look. "I told you I was beginning to understand," he said. "I was. But I haven't the full answer yet and—look, Cortland."

I followed his gesture. The enormous room, braced with its monstrous girders, lay before us. There was orderly activity all through the vast place, centering around a control panel that might be the device creating the dome of light that shielded this area, a white wall curtaining off everything outside the windows. Sometimes coruscating flashes sparkled here and there along the curtain. Attacks—failing? So little time had elapsed, really, since we left Paynter. This siege must be less than half an hour old and its full violence yet to come.

Under a web of shimmering fire at the far side of the room the table still stood with a body stretched out on it. Here most of the figures were at work on their second-stage Mechandroid, waiting for it to come alive.

"That's the most important thing that's happening here now," Belem said gravely. "I'm needed. I have no time nor mental energy to spare to solve your puzzles for you. Later, if we live, I'll try."

He turned swiftly away from me and crossed the big room toward the table. I followed in silence.

The second-stage Mechandroid lay quiet on its table, its eyes closed, the face serene and not quite human. There was, I thought, a remote familiarity about it too. Belem? I glanced at him, recognizing a likeness but not enough to explain the feeling that I had seen this man before. Man? Machine? Both and either.

"Is he alive yet?" I asked.

"It should take about four days more," one of the workers answered in English, speaking with mechanical precision. He sounded as if he had learned the language from records, so accurately that he reproduced even the buzz and click of the recording machine.

"He is beginning to think and be alive already, but he will not be finished for four days. Before then our defenses will have gone down, I think. We haven't enough power to maintain the blocking screens for long."

"Couldn't we all go out the way I came in?" I asked.

"We could not take *him* along. No, it's impossible. All we can do is defend ourselves as long as we can and hope to finish in time. I doubt if we will," he added casually.

"The other time a second-stage Mechandroid was attempted," I said rather tactlessly, "they blew up the whole city, didn't they? Why don't they do it now?"

"That was recognized as an error at the time," Belem told me. "They have improved siege weapons now and they will be curious about our devices. We must do the blowing up ourselves to prevent them when the time comes."

"But you'll go right on working until—"

"Naturally." Belem sounded surprised. "There is a demonstrable mathematical chance that we may succeed. It would be foolish to throw such a chance away. I was set a problem, you see, and I must work to solve it as long as I am able to move and think. This is part of the solution—this second-stage Mechandroid."

"I should think," I said with even less tact, "that you'd have a sort of built-in block against making anything really dangerous to civilization."

"So we have, within limits. This creation will not be basically destructive. Paynter is wrong. Human thinkers are very often wrong. The Man-Machine will endanger only obsolete things that should be destroyed. Humans ignore the obvious fact that machines can evolve exactly as men can. They *have* evolved.

"What is a city but a machine? Sooner or later it would have been necessary to create a second-stage Mechandroid anyhow. The coming problems will be too complex

for solution by either humans or Mechandroids."

BELEM looked down impassively at the serene sleeping face. Then he turned and walked away with a purposeful stride. I trailed him curiously. We ducked under griders and circled groups of workers who ignored us, reaching at last a rusty wall that opened under Belem's touch. I looked into the time-worn room of matter-transmission from which I had first glimpsed this scene.

On the rusted floor a silver marble lay. That was all.

"It was gold before," I said stupidly.

"Simple transmutation. It's a tricky pattern of radio-elements."

"It's so *small,*" I said.

"Pick it up."

I tried. I could easily slip my fingers around it but it wouldn't budge. It might have been riveted to the floor.

"Nothing—no known force—has power enough to move a negatively-charged activated matrix of this type," Belem said.

"The well-known immovable body."

"Eh?"

"You know that paradox. What happens when an irresistible force meets an immovable body?"

"But the existence of one automatically negates—"

"That's just my compensatory humor," I said. "I'm scared to death, so I'm joking." He didn't seem entirely satisfied. Well, neither was I.

I kicked at the thing, and hurt my toes.

I can't describe that battle because I didn't understand what was going on. It was probably an epic. I couldn't tell. Outside the windows the shining wall occasionally sparkled and sometimes bells would ring and the needles on gauges would jump wildly. From outside our protective shell it was probably a more spectacular scene.

Inside there wasn't even a feeling of tension because the Mechandroids went calmly about their duties and showed no sign of nervousness. Belem got busy on tasks of his own. I wandered around and watched, trying to make myself believe I was a war correspondent. Sometimes I went back and looked into the matter-transmitter at the silver marble. It just lay there.

That was the strange, yet obvious point about this future—I didn't understand the simplest basic things. I got glimpses of the Galaxy in operation, but I didn't know why it worked that way. A Neanderthaler legman on the *Piltdown Chronicle* might have had some similar difficulty in writing a feature story about Oak Ridge so his hairy readers could understand it.

Well, with matter-transmission, you could live on a planet named South Nowhere, right on the edge of the Galaxy at the jumping-off-place, and yet be able to reach out your hand and pick up a California orange, practically fresh off the tree.

Space didn't mean anything any more, so concepts of thinking based on familiar spatial frames of reference had to change. Except, perhaps, as far as initial exploration went. The first matter-transmitter had to be taken bodily to its destination. After that you could step into a transmitter on earth and step out on South Nowhere.

So, in a war in this time, the trick was to immobilize your opponent. Nail him down—as we were nailed down. After that, just keep pounding.

What we needed was a claw-hammer to pull up that nail.

I had seen enough of this future to begin thinking Galactically. Stray thoughts crossed my mind—random concepts involving yanking Centaurus II out of its orbit, clamping on a tractor-beam—what the devil *was* a tractor-beam?—and letting Centaurus pull up the silver marble, as a tractor pulls a mired car out of the ditch. I mentioned this idea to Belem. He said it was a striking bit of fantasy but not very practical—and what was a tractor-beam?

Discouraged, I sat down and thought some more.

"What makes you think the second-stage Mechandroid can destroy the nekron?" I asked Belem.

HE KEPT working on a cryptic device composed chiefly of vari-colored lenses. His placid face never changed.

"I can only hope so," he said. "He was designed expressly to solve that problem and he will have a fifty-five-power brain, compared to my twenty-power one. He'll be a tool—an extension of the social mechanism."

"With free will?"

"Yes—within obvious limits. He'll have to fulfil his purpose. He wouldn't be functional unless he did that."

"What is his purpose? Besides destroying

the nekron?"

"I told you he was an extension. Like the specialized tool of your hand."

"But I can control my hand."

"Not always consciously," Belem pointed out. "If you suddenly found yourself falling your hand would seize the nearest grip. Extend that parallel a bit farther and imagine your hand has a brain of its own.

"It will do—within its limits—what a hand can do best and it would know its potentialities better than you could. And it wouldn't try to rebel because it's part of the unit. The second-stage Mechandroid is a better hand for humanity—or a better brain in matters of intellect and logic."

He turned to his work again, flashing lights on and off at what looked like random. After a moment he went on speaking.

"As for the nekronic matter itself, it may be symbiotic or vampiric. I wonder. Thought and matter are very similar. It may be that nekronic matter has the potential ability to embody itself provided it finds a suitable host. It's significant that the creature itself is superficially manlike. Quite possibly it uses whatever prey it feeds on as a pattern from which to shape itself."

"You think it feeds?"

"You know as much as I about that. Probably more if you were capable of thinking the thing through. We don't know why the embodied nekronic entity kills. The most obvious solution is to replenish itself, to spread. Even a null-entropy organism might do that, in a sort of reverse pattern from the norm."

He flashed a blue light thoughtfully and considered the results. So far as I could tell, there had been none but Belem seemed to fall into a minor trance for a few minutes, considering his work.

I was watching a rift like black lightning that ran across the light-wall outside. A red cloud puffed through but the gap healed swiftly and the cloud was dissipated.

Belem twisted a dial, bringing two lenses into sharper focus. "Very likely we'll never know," he said. "We can't last much longer now. A War Council has taken command of this planet."

"Not Paynter?"

"He's one of them. That's odd. They've outvoted him three times already on the question of attack. He doesn't want us destroyed—which means he doesn't want *you* destroyed."

"Nice of him," I said. "After he tried to kill me in the Subterrane."

"Paralyze, not kill," Belem corrected.

SILENCE after that, while Belem worked and I watched.

"What would happen if you had time and material enough to make another of those marbles?" I inquired idly, after a while.

"A great deal. Both matrix-weapons—technically they're electronic matrices—would be negatively charged, and would repel each other. Unfortunately we have neither time nor equipment for that."

"What you need is a hacksaw to split that marble in two," I said. "Then they'd both change from immovable bodies to irresistible forces and shoot each other out of the galaxy. Right?"

"Wrong. Besides being impossible it wouldn't help. You wouldn't have two electronic matrices of the same pattern as before. It's exactly the same reason why the second-stage Mechandroid wouldn't be dangerous to the social body. The whole is never larger than the sum of its parts, and the sum of the parts always equals the whole."

"Then you never heard of Banach and Tarski," I said.

"Who?"

"Once I was assigned to write a feature science story on their experiment. I did plenty of research, because I had to find human interest in it somewhere and it was pure mathematics. The Banach-Tarski paradox, it was called—a way of dividing a solid into pieces and reassembling them to form a solid of different volume."

"I should remember that," Belem said, "since I have all your memories. It was only theoretical, wasn't it?" He searched my memory. I felt uncomfortable as though, under partial anaesthesia, I watched a surgeon investigating my digestive tract.

"Theoretical, sure," I said. "But I did a repeat on the subject later. It took twenty-three years before somebody figured out how to apply the trick to a physical solid. I forget the details."

"No you don't," Belem said, turning from his work and staring at me. "You have no control over your mind, that's all. But the information is stored there. Apparently I didn't get all the details when Paynter searched your memories. There's a name—Robinson?"

"It could be. I don't know."

His face showed no change but I thought I sensed a growing excitement within him. "Cortland," he said, "I want to enter your mind again. I think—"

CHAPTER XX

Last Defense

APPARENTLY he thought I might object—not that that would have made any difference—for the next thing I knew the quicksilver eyes were growing larger and the next instant they had changed and refocused so that I saw them, as it were, behind my own eyes. I could see the motionless body of Belem standing before me but his face was blanker than ever.

Within my head, he spoke to me. "Remember. It's all there, in your memory. The right associations will recall it. The unconscious never forgets anything. Robinson. The University of—"

"California," I thought and something clicked and swung open and I saw a page open before me—a page I had first read thousands of years ago—and the fine print swam into remembered visibility.

" 'Professor Raphael M. Robinson of the University of California now shows that it is possible to divide a solid sphere into a minimum of five pieces and reassemble them to form two spheres of the same size as the original one. Two of the pieces are used to form one of the new spheres and three to form the other.

" 'Some of the pieces must necessarily be of such complicated structure that it is impossible to assign volume to them. Otherwise the sum of the volumes of the five pieces would have to be equal both to the volume of the original sphere and to the sum of the volumes of the two new spheres, which is twice as great.' "

That was all. It wasn't as much as Belem would have liked—I could feel his impatience and the way he seemed to be shaking my mind over for more details but I couldn't give him what I hadn't got. After awhile the metallic mind unlinked from mine and in a moment the motionless figure before me stirred, turned without a word and began making tentative drawings on the corner of a chart convenient upon the wall.

When I asked him questions he told me remotely to go away.

That was how it started. There's no use in my trying to tell you how it ended. I didn't understand. It would be ridiculous for me even to pretend I know how it was done in concrete fact before my eyes. But it was done.

Not easily. Not quickly. In fact it came dangerously close to not being done at all, simply because it took so long.

I was able to watch the first stages of Belem's experiments. He knocked down the problem of lenses and lights upon which he'd spent so much time and began setting up theoretical paradoxes in three dimensions, following the Banach-Tarski geometric plan. I watched him playing with ghostly spheres and angles of light until my head began to ache from following the changing shapes.

What he was attempting was clearly impossible.

I wandered away after awhile and watched the play of lights outside. The display had recently become a lot more spectacular and more interesting to watch but that was not good. Even I could see that, though nobody would answer my questions. The methodical machine-men were not panicky but you could see they had accelerated their pace. They were recognizing the need for hurry.

The second-stage Mechandroid on its table had changed, too. The brilliant neural webbing above it had simplified. Light ran now only in the main channels, letting the finer nerve-wires run very pale, but the synapse-points glowed like stars along the major lines.

And there was a pale glow hanging like a cocoon of radiance low over the motionless figure.

I watched little groups of workers cluster around it, bending their heads together over the table, and I had the impression that they were communicating with their new-born super-kinsman. I even got the idea that he was advising them, for those who left the group went directly to work with a fresh impetus.

It was a little like what must go on in a hive as the workers cluster around the queen-mother.

They were very definitely working against time now—perhaps against hours, even minutes.

IT WAS when the black lightning opened a second rift in the wall of shielding light that the last galvanic spasm of activity before the end stirred the workers to their final tasks.

Another red cloud puffed through the wall where the lightning had ripped it but this time the breach did not close. Instead, a horizontal pillar of red light lengthened through the smoke, unfolding straight toward the laboratory walls.

It was then that a bell rang behind me.

The effect was electrifying upon every Mechandroid in the building. Like everyone else I turned to stare. Belem was standing back from his work-table, a look of smugness upon his otherwise expressionless face.

"This is it," he said.

Even the crowd around the neural-web table thinned as the workers in the laboratory flocked around him to watch.

He had a sphere about the size of a grapefruit, floating in mid-air above his table. He did things to it with quick flashes of light that acted exactly like knives, in that it fell apart wherever the lights touched, but I got the impression that those divisions were much less simple than knife-cuts would be. The light shivered as it slashed and the cuts must have been very complex, dividing molecules with a selective precision beyond my powers of comprehension.

The sphere floated apart. It changed shape under the lights. I am pretty sure it changed shape in four dimensions, because after a while I literally could not watch any more. The shape did agonizing things to my eyes when I tried to focus on it.

When I heard a long sigh go up simultaneously from the watchers I risked a look again.

There were two spheres floating where one had floated before.

"Amoebas can do it," I said. "What's so wonderful about reproduction by fission?"

"Don't bother me," Belem said. "But get ready to leave when I give the word. There isn't much time left." He cast a worried glance at the window.

All over the enormous room an orderly withdrawal was in progress. They had taken down the neural webbing over the big table and were setting up a lower webbing on the table itself, just within the radiation of that cocoon of light. I could see now that the table was no longer supported on legs but floated free of the floor. They were ready to move it, obviously, which must mean that matter-transmission was about to resume operation.

"Take this tube," Belem said, "and go over to the transmitter. Careful, hold it with the blue side up. I'll be with you in a minute."

"Even if you can do it again with the silver marble," I remarked, taking the tube, "can you be sure you'll be any forrader? Nothing much happened when these two spheres shaped up."

"The marble, as you call it," Belem said, busily unhooking a glass spiral from its base, "is in effect an electron now, a negatively charged unit. Have you any idea how many tons of repulsion exist between cathode-ray particles, for instance, no matter how far apart they may be?

"You're about to see a demonstration. The degree of repulsion is practically infinite for our purposes. When you get over there, open the transmitter door—and hurry, will you?"

THE silver marble lay there on the floor of the transmitter, dully gleaming in the red light from the laboratory. The light was red because that cylinder of crimson had breached the protective radiations outside and was reaching inward, quivering back under the assaults of defense-lights, but stubbornly gaining yard by yard toward the laboratory wall.

Belem worked methodically, setting up his tubes and prisms. The table cocooned with bright webbing floated now just beside the door, ready to go out first when transmission functioned again. I could see dimly the face of the sleeper inside. The serenity of that face was impressive in a way I can't describe.

The second-stage Mechandroid slept, yes, but he wasn't wholly asleep now. The mind of the machine was awakening. It was time for it to wake. I could feel something in the very air that told me what was happening behind those impassive, emotionless features.

The shape of the features disturbed me, too. There was that haunting familiarity which I had no time now to track down. But I knew I had seen it before.

There wasn't much time for speculation. I think the laboratory defenses collapsed all at once. I heard no warning but overloaded screens suddenly went down with blinding soundless flashes between us and the attack-

ing forces. I think Belem must have been drawing heavily on the power-reserves in order to finish his experiment in geometric paradox.

He didn't seem surprised, nor did the others, when there was a dazzle of red and green brilliance in conflict, streaming like colored lightnings through the vast room, making the twisted girders stand out in black silhouette. One of the Mechandroids at Belem's elbow said something in one of the languages of this age which meant nothing to me.

Belem asked him a question. I caught the name of Paynter in the answer.

Belem moved a prism. His voice was quick but very calm. And this time as he spoke I caught an overtone in the air which the others, perhaps, had been realizing for some minutes. I can't say what it was. A pressure, a deep, serene wave, a quality of newness and difference too intangible to name.

But it was there. After a moment or two I knew what it was.

The sleeper was awake. Not physically yet. His body remained helpless in the cocoon of light. But the mind was speaking to the minds of his creators, a smooth strong mind functioning like perfect machinery with a deep hum of power.

BELEM laid down his tools and turned to me, gripped my arm, urged me away toward a sloping catwalk that spanned the great room.

"What's the matter?" I asked in bewilderment, following him willy nilly, because I could feel the metal of his machine-ancestry in that tight grip. "Something wrong? Won't the gadget work?"

"It will work. You and I are needed elsewhere now. The others can handle the escape."

"But I wanted to watch—"

"There is no time. You won't see the demonstration, after all."

I looked at him dubiously. There seemed to be no threat in his tone, but then there never was.

"What's happening?"

"A platoon of men is attacking under Paynter. We must hold them back until the matter-transmitter is reactivated. I'm acting under orders. The second-stage Mechandroid is conscious enough to take charge. He told me what to do—*look!*"

CHAPTER XXI

Infection Spreading

AND that was when the last defense of all went down. There was a blazing flash of crimson that seemed to lick every corner of the room. It died and the white-lit air trembled a little in its wake. But only for an instant.

Then, from somewhere outside, a spear of red light drove at us and, almost concurrently, a steel piston, ten feet thick, shot out like a battering-ram after it. I had a single glimpse of that blank solid-steel muzzle rushing forward like a Titan's fist—then it crashed through the wall of the building, with a thunderous impact and a shriek of torn and twisted metal, and ripped an irresistible path through the great girders.

It halted.

That cylinder of metal must have been more than half a mile long. Thirty feet of it extended through the riven wall into the chamber where we stood.

The blank muzzle opened like a shutter. Through a transparent wall I saw a little room banked with intricate control boards, and Paynter in a bucket-seat, his eyes shielded by darkened lenses, his mouth drawn down in a grimace as his hands moved swiftly across the panel before him.

A section of the cylinder dropped away. From its interior came leaping men, hooded and armored by light-colored suits of webbing. Each carried one of the basket-hilted paralysis-weapons.

I risked a look behind me. Far away, down a long vista of arched girders, I could see the Mechandroids gathered in a little group about the floating platform on which the second-stage Mechandroid lay and I thought that quick flashes of light were moving there—the same knife-like stabs of brightness I had seen when Belem divided his experimental sphere.

But the soldiers of Paynter were getting dangerously close—more than a score of them, inhuman and frightening in their hoods and protective suits.

Deliberately Belem turned his back on the soldiers runing toward us and looked at me.

Twice before I had had this experience.

But it wasn't a trick you could get used to—the quicksilver eyes expanding, rushing forward, slipping inside your head—and, impossibly, moving into place like supplementary lenses so that Belem was looking out through my own eyes, from within my mind.

I felt his will grip mine with paralyzing strength. Perhaps he thought I might resist. Certainly I would have, had I known what he intended.

Then he had control of my brain as well as my body. Belem's thought? But they were my own thoughts—superimposed, directing—

He was using my mind, as he might use a telegraph-key, to send out a message—a summons.

I had time only to realize *what* it was Belem was calling. There was no time to react, to fight the summons—for the answer came almost upon the heels of the call.

From high above the great room I could see that answering shadow sweep into sight. It came out of nowhere, literally out of nowhere, springing into being and moving forward with a speed so blinding I could not focus upon it. I had again that instant of recognition, of revulsion—that knowledge of its burning speed.

And then the nova of pure energy exploded outward, as it had done so many times before, from somewhere in the center of my consciousness.

BUT this time it was different. Never before had the thing been deliberately summoned. Whatever it was, from wherever it came, it had always before struck of its own will. Now it struck through mine—through Belem's, speaking with my mind. And that gave it a significance and a quality of culmination which its coming had never had before. This time it meant something. This time, perhaps, I would *know*—

The shock of energy blinded me. I waited for the fading to begin.

There was no fading. Instead a second shock followed close upon the first, then another and another—wave after rising wave, tide upon tide of devouring violence. Nothing like this had ever happened before. I was too sick and shaken with the overloading of my nerves, the staggering blows of sensation that battered me. I could not think or reason. I only knew that this time I was lost, drowned in the bursting violence.

It would not cease. It would never cease. It would go on forever. . . .

I saw the shadow of violence fade from a face. Across what seemed to be wide distances I saw the reflection of unimaginable violence ebb. Yes—the mind behind that face had known the staggering onrush of inhuman tides as deeply as my own.

In the control room of the great steel cylinder Paynter met my gaze—and I read sick horror in his eyes.

I could not move. Every nerve in my body felt burned out, short-circuited. I could see and hear a little; that was all. I saw Belem clambering up into the hollow side of the huge piston.

In a moment he appeared behind Paynter. Paynter, I thought, tried to move. His stare broke away from mine. But the Mechandroid's hands darted out, touching Paynter's neck, his head, his spine. Belem spoke a word and took Paynter's shoulder as the latter rose.

Belem's quicksilver eyes were no longer within my mind, I realized.

But I wasn't thinking clearly.

I had forgotten the armored soldiers.

Now I saw them. They were quite dead, all of them. I saw how they had died. I remembered the chain of bursting explosions as the killing shadow had swept down from above.

It was gone now—but it had fed well.

Belem and the silent obedient figure of Paynter came toward me. I felt the Mechandroid's fingers reach out and probe deeply into my flesh. There was brief pain, then I could move again. But I still could not think very clearly.

Belem seemed to be listening to a voice I couldn't hear. He said, as if to himself, "There isn't much time—" and urged both of us forward. Now that I turned, I could see that the matter-transmission chamber at the other end of the room was empty. The crowding Mechandroids with their slowly waking Sleeper had gone. They had stepped, in so many instants, from this place to some other planet that might be anywhere at all in the immeasurable vastness of the Galaxy.

"Come," Belem said and we moved toward the matter-transmitter.

The rusted metal walls shimmered around us, faded, vanished.

Across the depths of space the atoms that made us up dispersed, drew out, reintegrated again. Bright alloy plates shimmered into

being. We had stepped again from one world to another.

BELEM pushed the panel open. We stepped out—into a cavern of dusty rock.

On the floor at our feet a little glittering tree stood motionless, beside it a flat metal sheet with wire bars. Belem sighed with satisfaction.

"I didn't think they could do it," he said. "Word went out to one of us in the laboratories to get these things replaced but I didn't really think—well, there just isn't much time. Cortland, bring Paynter here, please."

I obeyed, moving in a curious dreamlike state, the aftermath perhaps of that monstrous rapport with the slaying shadow. Belem was kneeling beside the barred device that Dr. Essen had used to create the vibratory matrix that had isolated us from space.

"Useless," he said. "As I half suspected."

I looked up at the enclosing walls of stone, beyond which my own home planet stretched. It was curiously comforting to know that the rock overhead and the rock underfoot were the native structure of Earth. Here, on this uneven floor, my own body had fallen to dust.

I wondered if the drifts in which our feet left prints had once been—

"This is the cave of the time-axis then," I said slowly. "And it's no good. Not if you can't work the machine Dr. Essen used. Is it too complicated even for you, Belem? I should have thought—"

"That isn't the problem. It's comparatively simple really. The trouble amounts to personalized mental mutation. We could understand how a thing as simple as a Neanderthaler's battle hammer worked but we couldn't use it—we don't have the same muscular training and balance. And mental habits are far more subtle.

"An invention, in practical application, fits its age and the people of that age. By studying this apparatus, I could work back to the basic principle and construct something similar that *would* operate in my hands. But only Dr. Essen could use the device that's so completely hers. In effect it's an extension of her mind. And we're in a hurry. I've had to make other plans."

He glanced toward the closed panel of the transmitter and before he had finished speaking, it began to open. I think there was some mental warning which Mechandroids could exchange over considerable distances. Belem put a restraining hand on my arm as a second Mechandroid stepped into the cavern. He came directly from some world of dust and wind, for his hair was wildly blown and a reddish dust shook from his garments as he moved. He carried very carefully in both hands a milky-white crystalline egg.

Without a word he came forward, put it in Belem's hands and turned back to the transmitter. It sighed shut behind him and he was gone—back, perhaps, to the wind and dust of his unknown world.

Gingerly Belem laid the crystalline globe on the floor between the glass tree and the useless Essen device.

"This will do what has to be done," he said, looking down at it. "Give us a temporary force-field. It doesn't tap the basic cosmic energies as Dr. Essen's does but I hope it will protect us long enough. After the second-stage Mechandroid wakes we'll be safe. He can take over."

"And do what?" I asked, a little rebelliously. "Keep us asleep, set up a matrix to guard us—sure. And then send us in to the future? Maybe I don't want to go any more. What good could I do there alone? De Kalb's gone. Dr. Essen's gone. Even Murray would have been more help than nobody. As it is, I'd rather stay right here. It looks like an interesting world, what little I've managed to see of it. If you hadn't interfered I think I could have got along very well with Paynter."

"Except for one thing," he said calmly. "You're a carrier of the nekronic infection, as I think the People of the Face may have planned from the beginning. As a spur to prevent just what you've suggested."

"Why are *you* going, then?" I demanded. "It has nothing to do with you."

"Yes, it does have. Two things. First—I don't know why I'm going. The order came and I must obey it."

"From the second-stage Mechandroid?" I asked incredulously.

"Yes. The second reason is"— He looked up at me over his shoulder. He was kneeling to puzzle over the Essen machine, and gave me a sudden cool smile. "I go under orders," he said. "You go because of the nekronic spur. Do you know why Paynter must go too?"

"Because you've got him hypnotized," I said. "Why else?"

"Paynter is infected too."

I GAPED at him.

"Of course he is. Why else did he fail to kill you when he knew the danger you carried wherever you went? But suppose he had killed you—and the murders went on? The authorities would have had to look further—they would have found Paynter himself. So long as you lived you were the obvious scapegoat."

"All right," I said slowly. "It adds up. Is that the only reason why he has to go with us? Does your second-stage Mechandroid care about *that?*"

"Of course not." Belem had turned from the mystifying Essen machine and was working carefully with the milky-crystal globe now, his large fingers moving over it with the same clumsy deftness I had watched so often in De Kalb's identical fingers.

"Of course not. The real reason is very different. You've probably guessed it already. Do you not know, really, why you have trusted me so far? If your mind had put up any real opposition I couldn't have done all I did with it. Don't you *know* why you and I must go on to the world of the Face together—*as we first set out to do?*"

I stood there in the dusty cavern, in perfect silence, not surprised to find that I was trembling a little as his metal eyes met mine. After a long time I said, very softly, in a shaken, questioning voice, "De Kalb—De Kalb?"

"I think so," he said calmly. Then he reached out and with one finger stirred the heavy dust on the floor. He looked up at me, smiling wryly. "De Kalb is *there*. De Kalb is *that*. But here—" He struck his head a light rap, "Here I think he still lives. Latent. In abeyance. But still here."

I sat down suddenly, in the dust that may once have been Jerry Cortland. I was remembering the sudden oblivion that had briefly overtaken all of us who were duplicates of the sleepers in the cave as those original bodies fell apart.

"There would be no reason for you to go on to the World of the Face alone," he said, "if you went alone. But you won't. You can't. You never have been alone, have you, in this era? Always Topaz—who is Dr. Essen, asleep—or Paynter, who is Murray, asleep, or I—who am De Kalb—was with you. None of us knew. All of us have been moving along the lines of some pattern vaster than we can guess. Only now it beings to emerge a little."

As I drew a breath to speak the sound of the opening panel startled us both. Only Paynter, standing motionless in the grip of his hypnosis, did not move. My quick start was futile but Belem's two hands covered the crystal globe, ready, I think, to activate it and throw out the temporary force-field that would isolate us from attack—for awhile.

CHAPTER XXII

Reunion

WE WERE both expecting soldiers to come pouring from the transmitter. But no one came through the open panel. Instead, a voice spoke. A woman's voice, cool, clear, level.

"Ira?" it said. "Mr. Cortland? Colonel Murray, are you there?"

Dr. Essen! I thought. *Letta Essen!* An instant later Topaz came alone across the threshold.

It was Topaz and yet—it was Letta Essen too, more clearly than I had ever seen her before in the girl's amazingly adaptable features.

"I expected this," Belem said with perfect calm. "I didn't even send for her, I was so sure she would have to come. It's the pattern, Cortland. It's working itself out faster and faster now, beyond our control, I think. *Is* she Letta Essen?"

I nodded in bewilderment. The voice was not Dr. Essen's, of course, for it came from the vocal cords of Topaz, but it was not Topaz's voice either. It was cool, emotionless, nobody's voice. Dispassion speaking aloud. And the face was Topaz's face but changed, different.

I had seen the almost fluid mobility with which every emotion altered those lovely features but I had not been prepared for a change like this. And the ego, the soul, of Topaz was submerged. A tight, wary blankness was all that showed now—that and a sort of bright alarm.

"The soldiers!" she was saying a little breathlessly now, as she hurried toward us across the dust which was her own disinte-

grated body. "They're following me, Ira? It *is* Ira?" Her eyes were questioning on Belem's face.

The Mechandroid nodded. "They're following you?" he demanded. "How much do they know? Never mind—you can tell us later. Activate your machine—quickly!" And he gestured toward it.

She dropped to her knees beside the metal plate, hesitated, touched it doubtfully. "The connections have been changed," she said. "I can put them back in order but"—she glanced up—"it may take time."

"How long?"

"Too long." She looked from face to face, a little of Topaz's facile despair coming through the calm. "The soldiers—"

Belem's breath hissed through his teeth. We turned, seeing the panel in the wall opening again. Bright uniforms gleamed through the gap.

Belem's hands flashed with blinding speed above the crystal egg. Then a tower of golden light shot up like a fountain and spread out above us. It thinned as it spread, came showering down again into an enclosing hemisphere. Its brightness faded until we were looking through amber glass at the soldiers who came swarming from the transmitter, more and more with every opening and closing of the panel. Their weapons spat fire at us.

A burst of starry light sparkled on the amber of our shield and died. Another nova flared and faded against the screen. And another.

"We're safe," Belem said calmly. "For a few days, until the power dies. By then the second-stage Mechandroid should waken. But meanwhile, Dr. Essen—you had better repair your machine if you can."

She nodded, the bright curls tumbling. Then she rose and stepped carefully around the motionless, glittering tree toward the milky egg that was projecting our temporary salvation.

"I can't remember—very clearly," she said. "There was light—and then suddenly I knew I was myself—with some memories of a girl called Topaz." She frowned. "Maybe it would be clearer if—may I see your projector, Ira? Belem? Which are you, now?" She looked searchingly into his face.

"I am Belem," the Mechandroid said. "Do you know what it was that roused you out of the Topaz-state and reawakened the Essen mind? We are nearly sure now that, in the moment the time-axis shell and the bodies inside it crumbled, their sleeping minds merged with the minds of the physical duplicates. Why is not yet known. Why the minds of Paynter, Topaz and myself remained dominant while Cortland's submerged the mind of his host is still—"

He paused. For Topaz—Dr. Essen—was bending above the luminous egg. Now she seized it, lifted it high, and with one smooth gesture smashed it against the rocky floor.

IT WAS Topaz, of course—not Letta Essen, never Letta Essen.

The amber shell above us began to rift and shimmer into tatters. Beyond it the armed men pressed forward, shouting. A lance of hot white light shot past Belem's head and spattered fire from the rocky wall behind him. Topaz laughed, a shrill, high sound of pure excitement.

Then Belem moved.

He fell to one knee beside the shattered globe from which amber light was dying swiftly. His hands settled down over it, heedless of the sharp cutting edges of the broken crystal. And his body began to glow.

Swiftly the rifted light in the shell above us began to mend itself. The amber shining spread, met, joined. The armor strengthened, was solid again.

I could feel the tremendous energy pouring out of the Mechandroid's mind and body. It made the air quiver inside the hemisphere. As a man may suicidally bridge a gap between two charged electric wires, so Belem was using himself now. I saw him shudder as that frightful energy poured through him.

Paynter, forgotten in the melee, suddenly stirred beside us. I saw him take an uncertain step forward, then another, the blankness fading from his face. Belem's mind was losing control over his. Released from the hypnosis, active now, our enemy—he emerged from his paralysis.

From outside the shell that was our only hope the confused shouts of the soldiers came thinly. One voice rose above the rest, an officer's voice, full of urgent command.

"Topaz!" it shouted. "Topaz—stop the Mechandroid!"

Her quick response made doubly clear what had been clear enough before. She was wholly their tool. She had never been Letta Essen. Their integrators had worked out the truth as quickly as the Mechandroids had

fathomed it and Topaz was a ready instrument to their hands. She was still their most dangerous weapon and she had not failed yet.

I heard her high, clear laughter in response to the call and I whirled in time to see her snatch out a tiny, glittering weapon exactly like that rubber-lipped paralyzer Paynter had once turned upon me. This was smaller and it glittered with jewels and the flexible ring of its muzzle was fantastically colored. But it was no toy. I saw the lips suck in as she pressed its trigger, ready to send out a web of paralyzing force upon Belem.

The Mechandroid neither saw nor heard. All his mind was concentrated on keeping the force-field active. He was depending wholly on me.

I flung out an arm just in time to throw Topaz off balance. The bright-lipped weapon spat out its web, which floated just clear of Belem and flared into violent oblivion against the amber shell around us. Topaz hissed savagely at me and fought to level her weapon again at Belem. She was lithe and astonishingly strong, a protean shape that writhed snakelike in my arms.

There wasn't anything I could do about Paynter. He was almost fully awake, and reaching half dazedly for the gun at his belt. Topaz, twisting furiously, was trying now to center her paralyzing weapon on me. Above us the shell of force began to tatter again. There was a limit to Belem's powers.

My mind, ranging wildly for an answer, stumbled upon the mad thought of re-hypnotizing Paynter. I knew I had not the power but—suddenly my glance fell upon the glittering little tree at my feet. There in its base was the switch I had once seen De Kalb press, a thousand years ago.

After three tries I reached it with my toe. Topaz was a furiously writhing burden in my arms, almost overbalancing us both. But the jeweled branches lighted, began slowly to move.

"Paynter!" I barked. "Look at that—*look at it!*"

He was not yet fully out of his hypnosis. He turned, startled, saw the branches that were spinning now with a dizzying blur of brightness. He grimaced and looked away.

Recklessly I let go of Topaz with one arm to point at the whirling tree.

"Look!" I yelled insistently. "Paynter, *look.*"

My own eyes were averted but I could see his head turn as he glanced at the hypnotic spinning. His head turned away again, slightly—but not his eyes. They stayed fixed, focused on the tree.

Slowly, slowly his head swung back, till he stood facing the circling lights. Intelligence faded from his stare. His hand dropped from his belt.

Simultaneously I realized that Topaz was no longer fighting me. She too was watching the tree.

Hynotized—both of them.

Paynter said in a dazed voice, "Cortland—Cortland, is that you? De Kalb? What's happening?"

"Murray?" I said, softly, tentatively. I knew it was probably a trick and yet—under the hypnosis of the tree the submerged mind of Murray might be wakening.

Belem let out a long, shuddering sigh. His body slumped. And the amber force-field about us seemed to run down like water and vanished. Across the suddenly cleared space the soldiers stared at us, caught for a second by surprise. Their eyes sought Paynter's.

But they met Murray's eyes. "Wait!" he barked at them sharply. "Halt!"

CONFUSED, they fell back a little. They would obey him—for a moment. So long as they thought he was Paynter.

Was he Paynter?

He turned a bewildered gaze to me, murmuring thickly, "Cortland, what's happened? I've been dreaming, haven't I? Dreaming I was a man named Paynter?"

There was a restless surge among the soldiers. They were muttering to their officers, uncertain, ready to be swayed one way or the other. Paynter—Murray—turned back to them.

"Halt!" he shouted again. "Wait for your orders!"

It worked—for awhile. But they would not wait long. Commands could not stop them from thinking. And I knew that if Murray told them to drop their weapons their indecision would crystallize into disobedience.

But the solution was very simple after all.

A gray light flickered around us, vanished, steadied again. A thin humming began. The light seemed to gather upon every dust-mote in the air, thickening in veil beyond veil. The soldiers faded into misty ghosts. . . .

Belem lifted his head wearily. "We're all here now," he said. "Courtland, Murray—"

The man who had been Paynter nodded slowly.

"—Dr. Letta Essen—"

Only then did I turn my head. Kneeling beside the original force-field device was Topaz, her fingers flickering over its controls.

Not Topaz, I thought. Not now. The face was hers, and the body, but when she glanced up and smiled it was Letta Essen's keen gray eyes that met mine. Hypnosis had released her, as it had released Murray, from the prison of the alien bodies, the alien minds.

"Now I will join you," Belem said, and turned to face the spinning tree.

There was silence under the dome of gray light.

When the Mechandroid turned he was still a man-machine but it was De Kalb who looked at us out of the metal eyes. He smiled. "Goodbye to Belem," he said. "We're here again, all of us."

* * * * *

"But why did it happen—*why?*" Letta Essen spoke with the voice of Topaz but it was unmistakably her own mind framing the thought and the words.

"I think I can guess," De Kalb said, through Belem's lips. "It was no accident that stranded us temporarily in this era. We set out to fight a battle, the four of us against the nekron. Well, *I think we have fought* that battle. I think what happened was a testing-field in which each of us was tried and found—useful. Now we go on to the final battle."

"And the nekronic killer with us," I said.

"The killer too. That is part of the pattern, I think."

"But wait a minute," Murray said. "What's become of this fellow Paynter? Where's Belem? Where's Topaz? And Cortland, were you always yourself?"

"The others are recessive in our minds, I think," De Kalb said. "Just as once we were recessive in theirs. Cortland's alter ego has always been recessive. Only he hasn't changed—except in that he changed bodies, as we all did. Why that had to happen I don't know—yet. Remember, Cortland has always been our catalyst. When he enters the picture things happen!"

"There's one thing that isn't going to happen," I said. "We can't get our bodies back, can we? These we borrowed. Or stole, if you want the accurate truth. The real owners are—sleeping, maybe. But will we ever dare sleep? Will we ever be sure we'll waken as ourselves? Each of us is a double mind in a single body now. If we come out alive from the world of the Face, what's going to happen then?"

"We'll know that," De Kalb said firmly, "when we wake again. We *will* sleep, Cortland. And whichever ego wakes at the end of the world will be the ego that was predestined to wake."

He hesitated briefly. "Now we must go," he said. "Look at the tree, Cortland. Murray, Letta—watch the tree. We will know the real truth—but later, much later—when we waken at the end of the world. When we look into the Face of Ea."

CHAPTER XXIII

The Face

TIME turned on and on upon its axis where we slept.

Time flowed like a river, wheeled like a sphere, moved like a galaxy through its own unimaginable dimensions toward its own inexorable ends. Motionless at the heart of motion, we slept on.

I think I dreamed.

Perhaps it was a dream in which the waters of time parted above us like a Red Sea parting and, through the walls of water, inquiring faces looked down into mine, mouthed words in unknown languages that came to me faintly from far away. If it *was* a dream the dream wore thin for an interval and I could almost hear them, almost feel their hands on me, tugging me awake.

And then, among them, a deep serene powerful command seemed to break and through the parted waters of sleep and time I looked up dimly into the face I had last seen beneath the cocoon of light, still in its natal slumber. But this time the Man-Machine was awake. This time I saw the calm quicksilver eyes and heard the calm voice running deep with power.

The eyes met mine. Their command was irresistible, and the command was—

Sleep.

The waters closed over me again and I ceased to exist.

* * * * *

As dreams repeat themselves in interrupted slumber it seemed to me that this dream returned. The quiet of turning time wore thin and I looked up again into inquisitive faces seen from far away, felt inquisitive hands plucking me awake. But these were strange faces, so strange I was startled a little out of my oblivion and all but sat up in my shock as I saw them.

Above the clustering misshapen heads the great calm figure of the Man-Machine loomed. I knew him by his eyes and by the deep humming tide of power that flowed from his mind to mine, silencing the chatter, healing over the breach in time. But I would not have known him, I think, except for that.

For long eons had passed in that measureless interval. The serene face was changing. But the tide of his command had not changed at all. He still said to me, *"Sleep,"* and I slept again.

Once more the dream returned. This time it was not faces that looked down at me but small, sharp, twinkling lights, insistent, deeply troubling. And as I roused enough to turn my head aside, trying to escape them, I had one glimpse of quicksilver eyes beneath calm brows, one remote echo of a voice that rolled like thunder. The lights vanished like candle-flames in a hurricane.

The thunder was so deep that it had tangible volume, rolled from a tangible source. I knew how mighty the source was. I knew, from that glimpse of the quicksilver eyes, how tremendously they had changed. The Man-Machine was no longer the size and shape of man. The face had changed, the functions had changed, the size was too vast for my dazed mind to comprehend.

"Sleep," the thunder commanded through diminishing vistas of space and time. And this time I sank into depths so profound that no dreams could plumb them.

* * * * *

I had thought that, when the time came, I would have much to write about the Face of Ea, that stands in the twilight of the world's end. But now, when I try, the words are hard to find. I have seen things no human being ever saw before. But the paradox is that it can't be communicated. Between experience and inexperience lies a gulf that can be bridged in one way and one way only.

You would have to go, as we went, to time's end and stand before the Face of Ea. Then I could tell you what I saw—and then I wouldn't need to tell you, for you would know.

* * * * *

I awoke.

The long, long sleep drained slowly out of my mind, like water receding down a sloping beach, leaving me stranded in a place I had never seen before. This was the time-axis—but it had changed. I looked with blank eyes around the dome that closed us in, a thin, gray dome through which red light filtered. We were no longer underground. I suppose the mountains had worn away, grain by grain, while we slept.

MURRAY'S was the first face I saw. I thought to myself, "Is it Murray this time or is it Paynter?" I watched him sit up on the gray floor, rubbing his face dazedly, his flesh pink in that filtering light. And I never knew whether it was Murray or Paynter.

Beyond him DeKalb looked at me with metallic eyes, smiled and sat up. And Topaz lifted her bright curls from the dusty floor and turned swiftly, from face to face, a glance that combined Letta Essen and herself in indissoluble union.

"Are we there?" she asked in a soft voice.

For answer I gestured toward the gray dome that shut us in, the world outside the dome.

As far as we could see, in every direction but one, the world lay flat and gray with a surface very familiar to us all in one way or another. A glazed grayness, solid, through which veins of rosy color, like curled hair, twined at random. The world was all nekronic matter now—except for one other thing.

We looked up at the Face of Ea, and we were silent.

As we looked, the dome above us shimmered, thinned, was gone. Down upon us the red twilight poured unbroken. It was faintly warm upon the skin. A very faint

wind blew past us and I can remember still the strange hollow odors it carried, wholly unlike anything I had ever scented before from winds blowing over open country.

We did not speak again, any of us. The time for talk had passed and a higher authority from that moment took all initiative out of our hands. We looked up at the Face of Ea.

How can I tell you what it was like—now? You know how I saw it in the Record, when the images of this same scene recreated themselves in my mind and I looked up from this same spot, in a faraway age, into the towering Face. Even then I saw it as a Face far transcending the human, reflecting experiences unknown to my era and my world, complex beyond any possible human guessing.

When I looked up now and saw the vast cliffside rising above the gray nekronic plain, it was not as a Face I saw it. Not at first. It was too complex to be recognizable. It was shaped into equations so far beyond my comprehension that I could not read them in terms of a human likeness.

I suppose a Piltdown man, gazing from under his eye-ridges at the face of a Toynbee or an Einstein would realize only very remotely that this was the face of an evolved member of his own species. And there were greater gulfs than that between the Face and me.

You will have guessed already what likeness it was that I finally recognized. I should have guessed too. It was not very surprising, really. Belem had given me the clue. A city, he had told me, was simply a machine for human living, an extension of the Mechandroid organism. And this city, which was the Face—

It looked down at us with a vast calm gaze, the same gaze that had brooded over our slumbers while time turned on its axis where we slept. The eyes that had once been quicksilver metal were very different now but I knew that gaze. The voice that had once run deeper and deeper with the volume of its power was a voice no longer, for it had passed beyond the need for a voice. The thing that had once been a Man-Machine had grown, developed, changed, synthesized with all of human living as the millennia went by.

Its functions had broadened to encompass every aspect of the civilizations through which it passed.

I UNDERSTOOD very little of the complex symbiosis which had taken place, and I can convey only a very small part of what I understood. For mankind had changed too. Perhaps love and hate and fear survived but not in the forms we know. Perhaps human features were not so different as we imagined. Perhaps, through the streets and plazas of the city which had begun as a Man-Machine and was now the cradle of the surviving race, men and women like ourselves really did move still.

I'm not sure. I walked those streets. But I am still not sure among what crowds I walked.

I've said the Face no longer needed a voice. This is why. In the old days I suppose the Man-Machine would have said, "Come," when it wanted us nearer. Now in effect it said, "Come"—and we came. But not on foot. Not under our own directions.

A whole segment of unnecessary, primitive activities was simply eliminated. There was no need for the clumsy human mechanisms to hear the summons, comprehend it, consider it, debate obeying, decide to comply, set muscles in motion and trudge across the plain.

Instead, the Face issued its voiceless command—and there was a sort of vortex in the red twilight air between the cliffside and ourselves. Smoothly, gently, inexorably, we were drawn up along that spinning of the air, seeing the gray earth fall away beneath us and then slide backward with blurring swiftness. The Face grew startlingly larger, too large to see as a whole, large and near and very clear.

We lost sight of the tremendous serene brow, of the vast smooth chin, of the great downward slope of the nose, of the cheeks etched with experiences which no human and no machine could ever have known separately.

Walls of rock rushed at us, opened, sucked us in.

What did I see? I wish I could tell you. I can make useless sketches in the air with both hands, trying to show how the spiral streets sloped and how the blurred house-fronts slid past. But if I did you would picture ordinary house-fronts and a street that curved but was like any street you know. And these were too different to describe.

It may be that the street really did move with all its strange shapely houses. I have an idea that the whole interior of the city

was actually in constant motion, as a machine might be, and that if motion ceased the machine would cease too, the city and the race of man.

But I can tell you this much. Ideas blew through that city like puffs of smoke through an industrial town. They brushed my mind and were gone, leaving only bewildering fragments in their wake. Sometimes they brushed two of us at once and we had incredible glimpses into one another's minds wherever the idea touched, evoking mutual memories, interlocking thoughts like rings that spread in water.

De Kalb had said, long ago, that these men were gods. He was right. They were far beyond any concept the men of my day had ever dreamed of for his gods. We walked through their city, were brushed by their thoughts, breathed the air of their streets, but we never saw them.

They were there. They were all around us. I am perfectly sure of that. I didn't see them. I didn't feel or hear them. But I knew they were there as surely as you know the chair in which you sit now has a back upon which you are leaning, though you won't see it unless you turn.

I had constantly the odd feeling that if *I* could turn I might come face to face with any man of the city I chose. But I was not capable of turning in the necessary direction, which would probably have been through a dimension we know nothing of.

I wish I could have seen them.

CHAPTER XXIV

Battling the Nekron

THE gusts of thought blew thicker and faster around us as we were drawn up the spiral. Our minds linked in impossible chords and discords as impossible ideas struck responses from us all.

Then the light failed us. Perhaps our sight failed us. I think we were drawn through a rather long space of solid wall, like a locked doorway which only this vortex could open for material things.

When we could see again we were in a bare and empty room. The shape of it was indescribable because of the extensions along which it reached. I was reminded a little of the corridor down which Belem had guided me toward the Subterrane of the middle future. Geometry, blindingly confused in patterns of inverted planes.

And then the room around us spoke directly, in the very air that pressed upon our minds. The Face of Ea spoke.

I had heard that voice before, if voice you could call it. The Man-Machine who guarded our age-long slumbers had said, "Sleep—sleep," in this same voice, growing deeper, calmer, less human as the aeons passed. Now it was the voice and the mind of the Man-Machine but immeasurably altered, incomprehensibly more complex.

"You have seen my first beginning," the Face of Ea said. "You and I have come together to this place at the end of our planet's life. I have watched over your sleep for a purpose. You are my weapons now. The nekron can never be destroyed.

"But with your help it can be excised out of normal space, normal time. For that I summoned you. For that I guided your journeying in time. Think and you will understand."

I believe the same knowledge flowed through the minds of my companions in the moment of timeless revelation that came to me. In a series of small, clear pictures I saw the manlike, killing creature that was the nekron, touching me as it swooped through oscillating time, becoming part human by the touch, running rampant through the worlds of humanity.

"Because of its release and its attacks," the voice of Ea said, "it is part human now. You have learned to fight it. To save yourselves and us you must finish the fight. The nekron cannot be touched—except by you. But we must somehow excise it out of the universe, not only in space but in time. We must cut back through time, so that we divide and alter the past as well as the present."

Pictures flashed again through our minds but I at least was unable to understand. I saw the worlds of the galaxy turning on their axes and, more cloudily, I saw time turning also, linked to the turning worlds each by its own axis as tangible as the planets themselves to that inner vision. Very dimly I saw something that flashed a little as Belem's severing lights had flashed when the two electronic matrices split in duplicates from the original.

"I need a wedge, a blade, to split the

nekronic infection from normal space and time," the voice went on. "You are my weapons. Do you understand the task before us?

"Belem learned the way, through the linkage of the knowledge of two eras. Now, on an infinitely larger scale, we must accomplish the same cleaving of two spheres. And each must remain equal in every way to the one original or the balance of the universe will be destroyed.

"They will differ—if we prevail—in one way only. One will be nekronic matter, one will be normal. Never in contact anywhere through all time and space. Do you understand your task?

"You must fight as my weapons against the nekronic universe. *Together we must cleave the universe itself in two.*"

IF YOU can imagine a sharp tool made sentient, you may guess a little of how what followed seemed to us, who were so integral a part of the tremendous conflict, the ultimate destruction.

First, the voice died.

Then there was movement past me and the room seemed to slip into darkness—or was it I that moved? Those corners of non-Euclidian shape were vortices that swept us apart. We four were the component parts of an exploding nova that shot outward through space, through time. Around me I saw stars, moving very swiftly, and I was alone and there was an inexplicable changing everywhere.

I knew then that I was moving through time, not a continuous movement but an oscillation, a vibration that swung me back and forth like a pendulum through a period of a few seconds. As the nekronic being moved.

There was further motion—not my own—around me. I could see only the vibrating stars but I knew through senses without name that my companions were not far away now. Paynter was a strong harsh relentless ego within reach of my mind, though all I could see was stars beyond stars, flaring into sight as my vision penetrated farther.

Belem was De Kalb and De Kalb was Belem, strongly egocentric, brilliant as the stars, a double mind that had shared a single body and learned to work with a single purpose in the dark levels below the conscious will. Topaz was Letta Essen, doubled and doubly armed.

There was a rushing shadow before me. Swifter and swifter, larger and larger, rushing upon me as I swept forward through the stars. I saw it, and then it was upon me in the same instant. The gap was bridged, the leap made. And I—I changed in size. I was as large as the shadow.

I touched it.

A fiery burning flared out around us and died instantly and the creature flashed into clear outline. Outline only, for it had no features and never did have, only the vague likeness to humanity it had drawn from the minds of its human hosts. Perhaps it was my own will, perhaps the will of the godlike hand that wielded me, that made me close with that solid shadow.

Where and how I gripped it I do not know. Perhaps I never really touched it at all. Perhaps it was merely will against will. All I could feel now was a furious deadly pressure against which I must exert the utmost of my strength in a direction I could not understand. Mental energy, pure will, perhaps simply the maintenance of temporal reality—how does the chisel know what force it exerts?

Somewhere I felt the enemy give back—not at any point where I met him. He weakened briefly far off in—space—time? How can I even guess? Perhaps we were hemming him in all around, temporally as well as physically, for some other human tool, De Kalb or Paynter, Letta Essen or Belem—had cut deeply into the resisting substance that was the nekronic universe.

The dark was a flashing, coruscating whirl of suns that blazed white. Tracks of fire burned in curves as stars rolled across that white vault. I knew how swiftly I must be moving in time.

With a jolt I was halted, pressed back. The blind, featureless face of the Adversary loomed larger, blotting out half the white heavens. Back and back I fell—

AND then suddenly there was support all around me, a merging of familiar minds with mine. It was deeper than the nearness I had felt before. We were drawn together, we four. Our minds touched and blended and became a single larger entity, a whole that yet preserved the individuality of us all. The cold clear thoughts of Belem and De Kalb lighted my mind like the facets of brilliance shot from a diamond. The blind white-hot violence of Murray and Paynter,

the infinite resource that was Topaz and Letta Essen.

Now the Adversary shifted its grip. I felt it give a little before our combined pressure. And we seemed to be viewing it from several points at once—*in time*. Cross-bearings in time itself. But how?

I knew the answer very clearly, in one flash.

We were the chosen weapons, the doubly sharpened blade. That was why my own body and the bodies of the rest had crumbled into dust when the time-axis chamber was shattered. Two identical matrices can not exist in the same space-time, but two identical matrices had been necessary to forge this weapon that was ourselves.

No mind fixed and conditioned to one sector in time could pin down the nekron. It took a larger concept, a binocular view from two points in time. And the Face of Ea had doubled our striking power when it doubled our minds in bodies that were basically identical with the ones we wore when we were born.

We had fought this battle before in miniature. In the world of the middle future we had been tempered to this final task. The nekron was fixed and trapped here—it could no longer evade us through time. Our strangely multiple mind could fix and focus upon it.

But the battle was yet to come.

With reckless, single-minded violence that multiple mind smashed out at the nekronic Adversary. As Paynter had driven the metal ram no harder than he drove himself against the fortress barrier, as Harrison Murray had so often hurled himself in stubborn, blind fury against foes tangible and intangible—so the weapon that was ourselves crashed against the black nekronic force striving to destroy us.

Somehow, somewhere, in some hidden weakness of ourselves, it sought and found a flaw. It drove us back. Its own incredible power smashed through warping channels of space and time at our welded minds.

If a single one of those inconceivable bolts of destruction had struck us it might have been the finish for us all. But none struck. For Topaz was part of the weapon which was ourselves and all Topaz's memories of infinite cleverness, infinitely adaptable life—with Letta Essen's cool, watchful mind to guide her.

Oh, Topaz was adaptable—that had been her purpose and her goal in society. She had incredible mental, emotional, muscular control and she reacted instinctively, automatically to any outside threat. Now I saw her talents' ultimate extension as—somehow, in a black star-blazing gulf that yet embodied the whole universe—we dodged and whirled and shifted so that none of those nekronic assaults quite smashed home.

Then, abruptly, we were falling. There was neither up nor down, but a frightful, abysmal vertigo that sucked us with impossible acceleration into the deeps below the universe itself. We were drawn into the black nighted heart of the nekron—its soul and center—and life itself receded to a point of infinity and was shut wholly out, away from us. If we had size it must have changed. If we had warmth and life it must have frozen instantly in all minds. In its last defense the nekron itself absorbed us.

CHAPTER XXV

Return Voyage

LUCKILY I cannot remember that last horror very clearly.

It was I who saved us from that.

This was my purpose. It was the plan from the beginning. That was why I had been allowed from the start to keep my own memories intact. For I was the anchor man at the end of the chain, the solid rock and the lifeline extending beyond the shore of sanity and logic and the monstrous, non-matter maelstrom engulfing the others.

They had needed their double minds to meet and fight the nekron, to carry the battle to its own grounds. But my purpose was to anchor their line. I could feel them losing touch with all familiar things, feel the dark destroying silence of the nekron closing them in.

It closed about me too but not completely.

It could not shut out my memories. I had a singleness of mind that made a chain too strong to snap. I remembered my own world, my own time, with a clarity unimpaired by double memories. All the small things that are changeless realities came back to me in one strong pouring tide.

The little things that mean nothing alone—things like firelight moving on the walls of

an old room, the smell of freshly-cut grass at twilight, the sharp fragrance of printer's ink, the heart-shaking thunder of a flight of planes moving in formation overhead, the taste of cold sweet spring-water gushing from a mountainside.

I remembered Earth.

So I woke them out of the dead emptiness of the nekron's heart. Their minds clung to mine and mine clung to the lifeline of my own world, my own time, my own indestructible memories.

Last of all De Kalb struck—with Belem's mind locked into his.

We were in the nekron's heart now. We had been admitted to its most vulnerable spot. Once before Belem had done something very like this—when he joined his mind with mine and summoned the nekronic killer to defeat Paynter's men.

Now in the nekron's very citadel, its innermost heart—he gripped our minds closer together. He forced them until they were one indeed.

He opened that gigantic ultimate mind to the nekron!

Two of the finest brains of two cultures guided us then—Belem, inhuman, emotionless, machine-bred, half-human—and De Kalb, with all his brilliance and his humanity balancing Belem's cold logic. Behind these two-in-one, the rest of us—a single unit now.

Paynter and Murray—hammer and anvil!

Topaz and Letta Essen—incomparably resourceful, evading the counter-attack.

I with my single mind, holding fast to the solidity of the normal universe, standing like a wall behind the others, holding open the gates in that wall through which we had come, through which the power of the Face of Ea poured to help us.

The power of the nekron flowed through us, channeled by Belem and De Kalb. It emptied, drained like a falling ocean into us. But we were not vulnerable, now. It could not—feed—upon us.

Water, changing to steam, must expand, find room to accommodate its physical change. The process must be completed. But this monstrous change could not be completed in any way normal to the nekron. It had not drained its force into us by choice—Belem had drawn and channeled it.

Now its normal release was blocked.

We were battered back beneath the onslaught of that terribly concentrated power. But we held. Somehow we held—the multiple minds of two civilizations, chosen and tempered by the last, greatest science of all.

Then—it exploded.

There is no other word. It expanded tremendously, through us and beyond us, and that frightful concentration of alien force was gone. The disincarnated, dissolved units of the nekron expanded—seeds of the death beyond death—but helpless in this single moment beyond time, no longer a functioning unit capable of planned action.

We could never kill it—but we had it helpless for the first instant in the history of the universe. One moment outside time was all we had—but one moment was enough.

From somewhere solidly at our backs, came the titanic pressure of the Face of Ea, an intoxicating flood of pure power flowing through us. One mighty burst of energy—it was enough.

The burning suns reeled around us again. They blurred—time blurred and space and the incredible infinite complexity of the universe shuddered and was divided.

That was the end.

THE suns flickered out around us. We were sinking into a dimness that swallowed up our senses as the darkness swallowed the light. But I could not quite let go. There was trouble somewhere—a question unanswered.

"Have you finished with us now?" I wondered in the darkness. "Are you sending us back, double-minded, into worlds where only a single body can dwell? It was you who destroyed our bodies—"

The great calm Face that was the composite of so many faces took shape before my mind's eye, perhaps tangibly before us in the thickening dark. The great, quiet voice said, "If Belem could divide matrices and I universes, do you need to doubt that your bodies can be divided too and each be duplicated exactly from a single matrix? It was done once, in Eden, before the first civilization rose. It shall be done again, by the power of this last civilization of all. Sleep, now—sleep."

In the dimness that followed upon the darkening of the suns and the stilling of the voice I remembered Genesis, and Adam's words. *Bone of my bones, flesh of my flesh.* . . .

The Face that watched drew further and further away, grew tinier and tinier in red-lit distances down a vista of diminishing

temporal lanes. . . .

I knew now that we must have swung far off around that other pole of time, the beginning, the wellspring of life and space and duration. We must have moved forward along the unchanging temporal axis toward our own world.

In which there was no nekron now, had never been, never would be.

But there were not even dreams in this slumber to hint at the stations of that journey.

* * * * *

So we returned.

So we woke.

It was Topaz whose eyes met mine when I sat up dizzily after that tremendous nightmare and found the rough walls of the cavern intact around us. Topaz? No—and yet not Letta Essen either. She smiled and it was Topaz's smile—but the long, long aeons had changed her.

Letta Essen's slumbering ego in the doubled body of the girl Topaz had wrought subtle alterations, pulling back that flexible flesh into a more fitting body for the woman who had been Letta Essen. It was an older and wiser Topaz, a younger Letta Essen, who met my first dazed glance when I awoke.

Murray was sitting up dizzily. De Kalb had already risen and was trying the flashlight that lay in the entry to our cavern, his face bewildered. I knew why. It seemed incredible that the battery should still be working after such millennia.

Only no millenniums had passed. We had been asleep no time at all as time is counted in this world.

We hardly spoke. We were still too stunned for clear thinking—it seemed only a moment ago that we had last looked into the Face of Ea. Unsteadily we made our way out of the cave. The low slanting sunlight of a summer evening still lay across the wooded mountain.

Instinctively I looked for the white building of the Kerry transmitter that opened upon the farthest worlds of the galaxy—but that was still a thousand years away. The mountains stretched in unbroken forests to the horizon.

At the foot of the slope, near the place where Murray's plane still stood awaiting us, was the cabin where De Kalb had lived long ago—months ago, perhaps, as we count time here but aeons had passed just the same—when this cavern was first dug out of the mountainside.

De Kalb unlocked the door. The cabin was musty from long disuse but we didn't care. Oddly enough we needed sleep more than anything else in the world. Oddly, because we had just now risen from a sleep of countless millions of years.

* * * * *

So that's the story.

And now you know why I can say—and prove—that the whole thing never happened. This isn't *my* world, now. Not any more. Not the world I left. This is a world in which no nekronic flash leaped from a box that Ira De Kalb opened and dropped to his hearthstone to infect the world, De Kalb and me. All that did happen once, in another world that hasn't existed since the four of us, a doubled weapon wielded by the Face of Ea, wrought the cleaving apart of two universes.

Imponderable forces shifted when that cleavage took place. You and I know nothing about it, for it happened far beyond the perceptions of any sentient creature. But it happened. Oh yes, it happened.

Funny, how important the little changes are. It's so hard to get used to the absence of so much I used to take for granted. And there are so many new things too, things that weren't there when I went away. Nobody knows that except the four of us, of course. Everybody thinks these things have always been as they are now.

Well, it's all right as a world—maybe.

BUT not as a world for me. Here I've always been on that roller-coaster, snatching as things rush by. Maybe I'd do the same in any world. You never can tell till you try.

So I'm going to try.

There are still sleepers in that cavern where the time-axis turns, you know. If De Kalb had looked deeper when he first brought out our images under ultra-violet, he'd have seen more than we ever guessed, at the time. He'd have seen more than our doubled images, still asleep, waiting for the world of the middle future which is the final station in their round-trip through time. Paynter, 'Belem, Topaz are sleeping there.

And so am I. And I mean myself, Jerry Cortland—twinned.

You see, I've looked. And I'm there. The other fellow, the one who came up the hill from the Kerry transmitter and blacked out and received my dominant mind, is asleep of course, waiting for his own time. But beside him is—Jerry Cortland. Two of us. Double images.

You realize what that means?

I'm going forward. I know—*because I went.* It was a wonderful world they had. I want to see more of it. I want to wake up in a time when the race of man is spreading through the galaxy, leaping across the gulfs between the stars, opening the gates to all the worlds. I want to and I will.

But I'll never see Topaz again—unless I'm luckier than I expect to be. I'll never see Belem or Paynter or the world where they'll wake—finding it changed too, I suppose, and a little bewildering, as mine is now.

The trouble is, *two identical matrices* can't exist in the same time. And that other fellow has priority. It's his world, his time. He'll wake with the others and go out. I'll sleep on until the way is clear. That means, of course, until he dies.

I wish I knew more about him. He had no record in the vast files of the galactic government. He was dressed in ragged clothing when I saw him. That indicates he's some wanderer of the outland planets, living a dangerous life—if he goes back to it. He may not. Waking with Paynter, Belem, Topaz, he may be drawn into another kind of career entirely. I'll know someday. But not until he's dead. Not until I wake again.

And when I wake, who knows how many years will have elapsed since Topaz stepped out of the time-axis into her own world again? She may be an old woman before I see her. She may be only a few years matured. She may have been fifty years dead. Perhaps I may never be sure. You see, I don't even know her name.

She was Topaz that week in which I wakened. Next week, and the week after and the year beyond that—do you think any records are kept of the whims of a girl like Topaz? Not even she will remember by the time I wake, if she's alive then. Time moves too fast for that.

Well, all this belongs to the future. And so do I. Even before the cosmic cleavage altered all history I was a misfit in this civilization. And now it just isn't my world anymore. I don't belong here. So I think I'll take my chances in that other place, where I won't have to get used to the little things that keep bothering me here and bother nobody but me—

Like Washington being the capital of the United States—*now!*

Read "The Story of Rod Cantrell" in this issue—then you will have an idea of what is in store for you in

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FLAW

By JOHN D. MacDONALD

I saw the Sun shining on a six-pointed star

"I never thought much about the frontier of the stars until, in 1959, I met young Johnny Pritchard . . ."

I RATHER imagine that I am quite mad. Nothing spectacular, you understand. Nothing calling for restraint, or shock therapy. I can live on, dangerous to no one but myself.

This beach house at La Jolla is comfortable. At night I sit on the rocks and watch the distant stars and think of Johnny. He probably wouldn't like the way I look now. My fingernails are cracked and broken and there are streaks of gray in my blonde hair. I no longer use makeup. Last night I looked at myself in the mirror and my eyes were dead.

It was then that I decided that it might help me to write all this down. I have no idea what I'll do with it.

You see, I shared Johnny's dreams.

And now I know that those dreams are no longer possible. I wonder if he learned how impossible they were in the few seconds before his flaming death.

There have always been people like Johnny and me. For a thousand years mankind has looked at the stars and thought of reaching them. The stars were to be the new frontier, the new worlds on which mankind could expand and find the full promise of the human soul.

I never thought much about it until I met Johnny. Five years ago. My name is Carol Adlar. At that time I was a government clerk working in the offices at the rocket station in Arizona. It was 1959. The year before the atomic drive was perfected.

Johnny Pritchard. I figured him out, I thought. A good-looking boy with dark hair and a careless grin and a swagger. That's all I saw in the beginning. The hot sun blazed down on the rocks and the evenings were cool and clear.

There were a lot of boys like Johnny at the rocket station—transferred from Air Corps work. Volunteers. You couldn't order a man off the surface of the earth in a rocket.

The heart is ever cautious. Johnny Pritchard began to hang around my desk, a warm look in his eyes. I was as cool as I could be. You don't give your heart to a man who soars up at the tip of a comet plume. But I did.

I told myself that I would go out with him one evening and I would be so cool to him that it would cure him and he would stop bothering me. I expected him to drive me to the city in his little car. Instead we drove only five miles from the compound, parked on the brow of a hill looking across the moon-silvered rock and sand.

AT first I was defensive, until I found that all he wanted to do was to talk. He talked about the stars. He talked in a low voice that was somehow tense with his visions. I found out that first evening that he wasn't like the others. He wasn't merely one of those young men with perfect coordination and high courage. Johnny had in him the blood of pioneers. And his frontier was the stars.

"You see, Carol," he said, "I didn't know a darn thing about the upstairs at the time of my transfer. I guess I don't know much right now. Less, probably than the youngest astronomer or physicist on the base. But I'm learning. I spend every minute I can spare studying about it. Carol, I'm going upstairs some day. Right out into space. And I want to know about it. I want to know all about it.

"We've made a pretty general mess of this planet. I sort of figure that the powers-that-be planned it that way. They said, 'We'll give this puny little fella called man a chance to mess up one planet and mess it up good. But we'll let him slowly learn how to travel to another. Then, by the time he can migrate, he will be smart enough to turn the next planet into the sort of a deal we wanted him to have in the beginning. A happy world with no wars, no disease, no starvation.'"

I should have said something flip at that point, but the words weren't in me. Like a fool, I asked him questions about the galaxies, about the distant stars. We drove slowly back. The next day he loaned me two of his books. Within a week I had caught his fervor, his sense of dedication.

After that it was, of course, too late.

All persons in love have dreams. This was ours. Johnny would be at the controls of one of the first interplanetary rockets. He would return to me and then we would become one of the first couples to become colonists for the new world.

Silly, wasn't it?

He told me of the problems that would be solved with that first interplanetary flight. They would take instruments far enough out into space so that triangulation could solve that tiresome bickering among the physicists and astronomers about the theory of the exploding universe as against the theory of "tired light" from the distant galaxies.

And now I am the only person in the world who can solve that problem. Oh, the others will find the answer soon enough. And then they, too, can go quietly mad.

They will find out that for years they have been in the position of the man at the table with his fingers almost touching the sugar bowl and who asks why there isn't any sugar on the table.

That year was the most perfect year of my life.

"When are you going to marry me, Johnny?" I asked him.

"This is so sudden," he said, laughing. Then he sobered. "Just as soon as I come back from the first one, honey. It isn't fair any other way. Don't you see?"

I saw with my mind, but not with my

heart. We exchanged rings. All very sentimental. He gave me a diamond and I gave him my father's ring, the one that was sent home to my mother and me when Dad was killed in Burma in World War II. It fit him and he liked it. It was a star ruby in a heavy silver setting. The star was perfect, but by looking closely into the stone you could see the flaws. Two dark little dots and a tiny curved line which together gave the look of a small and smiling face.

With his arm around me, with the cool night air of Arizona touching our faces, we looked up at the sky and talked of the home we would make millions of miles away.

Childish, wasn't it?

Last night after looking in the mirror, I walked down to the rocks. The Government money was given to me when Johnny didn't come back. It is enough. It will last until I die and I hope it will not be too long before I die.

The sea, washing the rocks, asked me the soft, constant question. "Why? Why? Why?" I looked at the sky. The answer was not there.

Fourteen months after I met Johnny, a crew of two in the *Destiny I* made the famous circuit of the moon and landed safely. Johnny was not one of them. He had hoped to be.

"A test run," he called it. The first step up the long flight of stairs.

You certainly remember the headlines given that flight of *Destiny I*. Even the New York *Times* broke out a new and larger type face for the headlines. Korby and Sweeny became the heros of the entire world.

The world was confident, then. The intervening years have shaken that confidence. But the world does not know yet. I think some suspect, but they do not know. Only I know for a certainty. And I, of course, am quite mad. I know that now.

Call it a broken heart—or broken dreams.

JOHNNY was selected for *Destiny II*. After he told me and after the tears came, partly from fear, partly from the threat of loneliness, he held me tightly and kissed my eyes. I had not known that the flight of *Destiny II*, if successful, would take fourteen months. The fourteen months were to include a circuit of Mars and a return to the takeoff point. Fourteen months before I would see him again. Fourteen months before I would feel his arms around me.

A crew of four. The famous Korby and Sweeny, plus Anthony Marinetta and my Johnny. Each morning when I went to work I could see the vast silver ship on the horizon, the early sun glinting on the blunt nose. Johnny's ship.

Those last five months before takeoff were like the five months of life ahead of a prisoner facing execution. And Johnny's training was so intensified after his selection that I couldn't see him as often as before.

We were young and we were in love and we made our inevitable mistake. At least we called it a mistake. Now I know that it wasn't, because Johnny didn't come back.

With the usual sense of guilt we planned to be married, and then reverted to our original plan. I would wait for him. Nothing could go wrong.

Takeoff was in the cold dawn of a February morning. I stood in the crowd beside a girl who worked in the same office. I held her arm. She carried the bruises for over a week.

The silver hull seemed to merge with the gray of the dawn. The crowd was silent. At last there was the blinding, blue-white flare of the jets, the stately lift into the air, the moment when *Destiny II* seemed to hang motionless fifty feet in the air, and then the accelerating blast that arrowed it up and up into the dark-gray sky where a few stars still shone. I walked on leaden legs back to the administration building and sat slumped at my desk, my mouth dry, my eyes hot and burning.

The last faint radio signal came in three hours later.

"All well. See you next year."

From then on there would be fourteen months of silence.

I suppose that in a way I became accustomed to it.

I was numb, apathetic, stupefied. They would probably have got rid of me had they not known how it was between Johnny and me. I wouldn't have blamed them. Each morning I saw the silver form of *Destiny III* taking shape near where *Destiny II* had taken off. The brash young men made the same jokes, gave the office girls the same line of chatter.

But they didn't bother me. Word had got around.

I found a friend. The young wife of Tony Marinetta. We spent hours telling each other in subtle ways that everything would come

out all right.

I remember one night when Marge grinned and said:

"Well anyway, Carol, nobody has ever had their men go quite so far away."

There is something helpless about thinking of the distance between two people in the form of millions of miles.

After I listened to the sea last night, I walked slowly back up the steep path to this beach house. When I clicked the lights on Johnny looked at me out of the silver frame on my writing desk. His eyes are on me as I write this. They are happy and confident eyes. I am almost glad that he didn't live to find out.

The fourteen months were like one single revolution of a gigantic Ferris wheel. You start at the top of the wheel, and through seven months the wheel carries you slowly down into the darkness and the fear. Then, after you are at your lowest point, the wheel slowly starts to carry you back up into the light.

Somewhere in space I knew that Johnny looked at the small screen built into the control panel and saw the small bright sphere of earth and thought of me. I knew all during that fourteen months that he wasn't dead. If he had died, no mater how many million miles away from me, I would have known it in the instant of his dying.

The world forgets quickly. The world had pushed *Destiny II* off the surface of consciousness a few months after takeoff. Two months before the estimated date of return, it began to creep back into the papers and onto the telescreens of the world.

Work had stopped on *Destiny III*. The report of the four crewmen might give a clue to alterations in the interior.

It was odd the way I felt. As though I had been frozen under the transparent ice of a small lake. Spring was coming and the ice grew thinner.

Each night I went to sleep thinking of Johnny driving down through the sky toward me at almost incalculable speed. Closer, closer, ever closer.

It was five weeks before the date when they were due to return. I was asleep in the barracks-like building assigned to the unmarried women of the base.

The great thud and jar woke me up and through the window I saw the night sky darkening in the afterglow of some brilliant light.

WE gathered by the windows and talked for a long time about what it could have been. It was in all of our minds that it could have been the return of *Destiny II*, but we didn't put it into words, because no safe landing could have resulted in that deathly thud.

With the lights out again, I tried to sleep. I reached out into the night sky with my heart, trying to contact Johnny.

And the sky was empty.

I sat up suddenly, my lips numb, my eyes staring. No. It was imagination. It was illusion. Johnny was still alive. Of course. But when I composed myself for sleep it was as though dirges were softly playing. In all the universe there was no living entity called Johnny Pritchard. Nowhere.

The telescreens were busy the next morning and I saw the shape of fear. An alert operator had caught the fast shape as it had slammed flaming down through the atmosphere to land forty miles from the base in deserted country making a crater a half-mile across.

"It is believed that the object was a meteor," the voice of the announcer said. "Radar screens picked up the image and it is now known that it was far too large to be the *Destiny II* arriving ahead of schedule."

It was then that I took a deep breath. But the relief was not real. I was only kidding myself. It was as though I was in the midst of a dream of terror and could not think of magic words to cause the spell to cease.

After breakfast I was ill.

The meteor had hit with such impact that the heat generated had fused the sand. Scientific instruments proved that the mass of the meteor itself, nine hundred feet under the surface was largely metallic. The telescreens began to prattle about invaders from an alien planet. And the big telescopes scanned the heavens for the first signs of the returning *Destiny II*.

The thought began as a small spot, glowing in some deep part of my mind. I knew that I had to cross the forty miles between the base and the crater. But I did not know why I had to cross it. I did not know why I had to stand at the lip of the crater and watch the recovery operations. I felt like a subject under post-hypnotic influence—compelled to do something without knowing the reason. But compelled, nevertheless.

One of the physicists took me to the crater in one of the base helicopters after I had

made the request of him in such a way that he could not refuse.

Eleven days after the meteor had fallen, I stood on the lip of the crater and looked down into the heart of it to where the vast shaft had been sunk to the meteor itself. Dr. Rawlins handed me his binoculars and I watched the mouth of the shaft.

Men working down in the shaft had cut away large pieces of the body of the meteor and some of them had been hauled out and trucked away. They were blackened and misshapen masses of fused metal.

I watched the mouth of the shaft until my eyes ached and until the young physicist shifted restlessly and kept glancing at his watch and at the sun sinking toward the west. When he asked to borrow the binoculars, I gave them up reluctantly. I could hear the distant throb of the hoist motors. Something was coming up the shaft.

Dr. Rawlins made a sudden exclamation. I looked at the mouth of the shaft. The sun shone with red fire on something large. It dwarfed the men who stood near it.

Rudely I snatched the binoculars from Dr. Rawlins and looked, knowing even as I lifted them to my eyes what I would see.

Because at that moment I knew the answer to something that the astronomers and physicists had been bickering about for many years. There is no expanding universe. There is no tired light.

As I sit here at my writing desk, I can imagine how it was during those last few seconds. The earth looming up in the screen on the instrument panel, but not nearly large enough. Not large enough at all. Incredulity, then because of the error in size, the sudden application of the nose jets. Too late. Fire and oblivion and a thud that shook the earth for hundreds of miles.

No one else knows what I know. Maybe soon they will guess. And then there will be an end to the proud dreams of migration to other worlds. We are trapped here. There will be no other worlds for us. We have made a mess of this planet, and it is something that we cannot leave behind us. We must stay here and clean it up as best we can.

Maybe a few of them already know. Maybe they have guessed. Maybe they guessed, as I did, on the basis of the single object that was brought up out of that shaft on that bright, cold afternoon.

YES, I saw the sun shining on the six-pointed star. With the binoculars I looked into the heart of it and saw the two dots and a curved line that made the flaws look like a smiling face. A ruby the size of a bungalow.

There is no expanding universe. There is no "tired light." There is only a Solar system that, due to an unknown influence, is constantly shrinking.

For a little time the *Destiny II* avoided that influence. That is why they arrived too soon, why they couldn't avoid the crash, and why I am quite mad.

The ruby was the size of a bungalow, but it was, of course, quite unchanged. It was I and my world that had shrunk.

If Johnny had landed safely, I would be able to walk about on the palm of his hand.

It is a good thing that he died.

And it will not be long before I die also.

The sea whispers softly against the rocks a hundred yards from the steps of my beach house.

And *Destiny III* has not yet returned.

It is due in three months.

COMING IN THE NEXT ISSUE

The Magnificent Failure

The Second in a Series on the Conquest of Space

By RENE LaFAYETTE

THE STORY OF ROD

EVERY schoolboy knows, now, that Rod Cantrell was the first man on Mars. He was also the first man on Venus, and Calypso, and Neptune VIII, and he led the expedition which colonized Vega II, which was the first permanent human colony on a planet other than Earth. Rod Cantrell is a famous man—so famous for his space pioneering that very few people remember that it all really came about because of the revolt of the Total State against the Earth Government.

Most people have forgotten that revolt altogether. The history books have so many triumphs of man's conquest of the stars to record that bad news of olden days tends to be crowded out. But there was a time when civilization as we know it was in very great danger indeed. And this is the story of Rod Cantrell at that time:

The beginning of the revolt doesn't matter. It had been the subject of underground planning for a hundred years, among the survivors and descendents of a fanatical cult believing in totalitarianism. And then, one day, defensive neutron-screens leaped skyward around a certain part of Europe, and all communication with the rest of the world was broken, and there was a week of seeming chaos and confusion behind the curtain of lethal radiation.

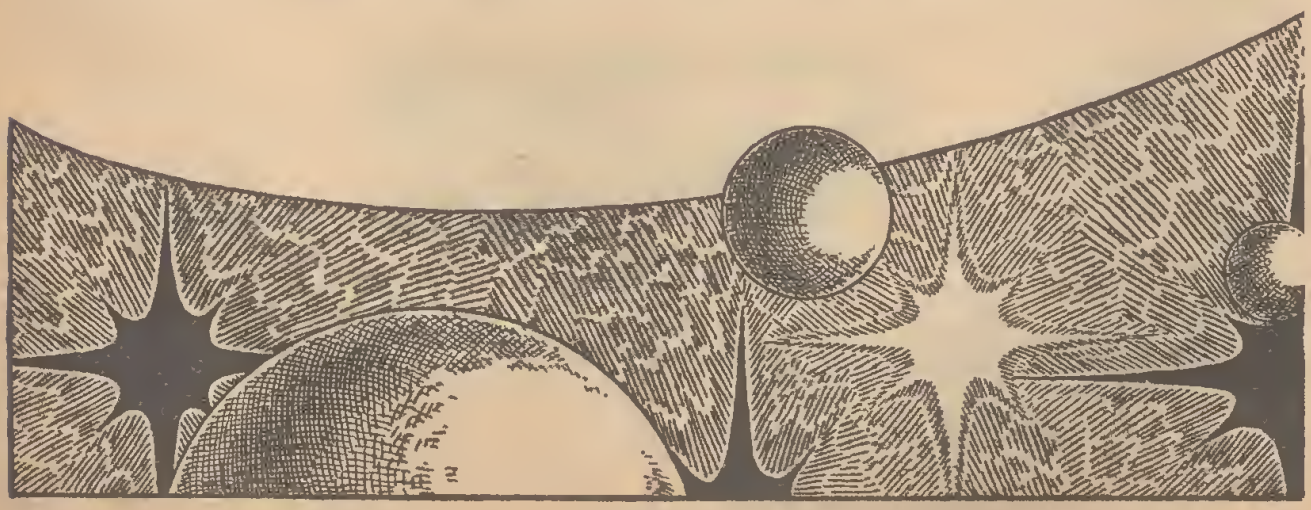
Then a boastful and arrogant manifesto came out. It demanded the surrender of the Earth Government to the rulers of a so-called Total State, who were declared to be a new, superior, and quite irresistible order of men.

Earth Government air-fleets roared to the attack—and crashed in screaming dives as they hit the neutron-screens. Then tides of shimmering, flowing death poured outward from the borders marked by the screens, and wherever they reached, all living things died, and presently the screens moved out and the tides flowed on again.

It was very bad, but within weeks the Earth Government scientists found a way to counter that tidal death. They found a trick or two which were helpful against the screens, and they found a way to neutralize the radar-ghosts which for a time let the Total State air-fleets roam secure from radar detection. Then there were magnetic flares which threatened to incapacitate all the machines Earth Government armies depended on. They had to be beaten, too.

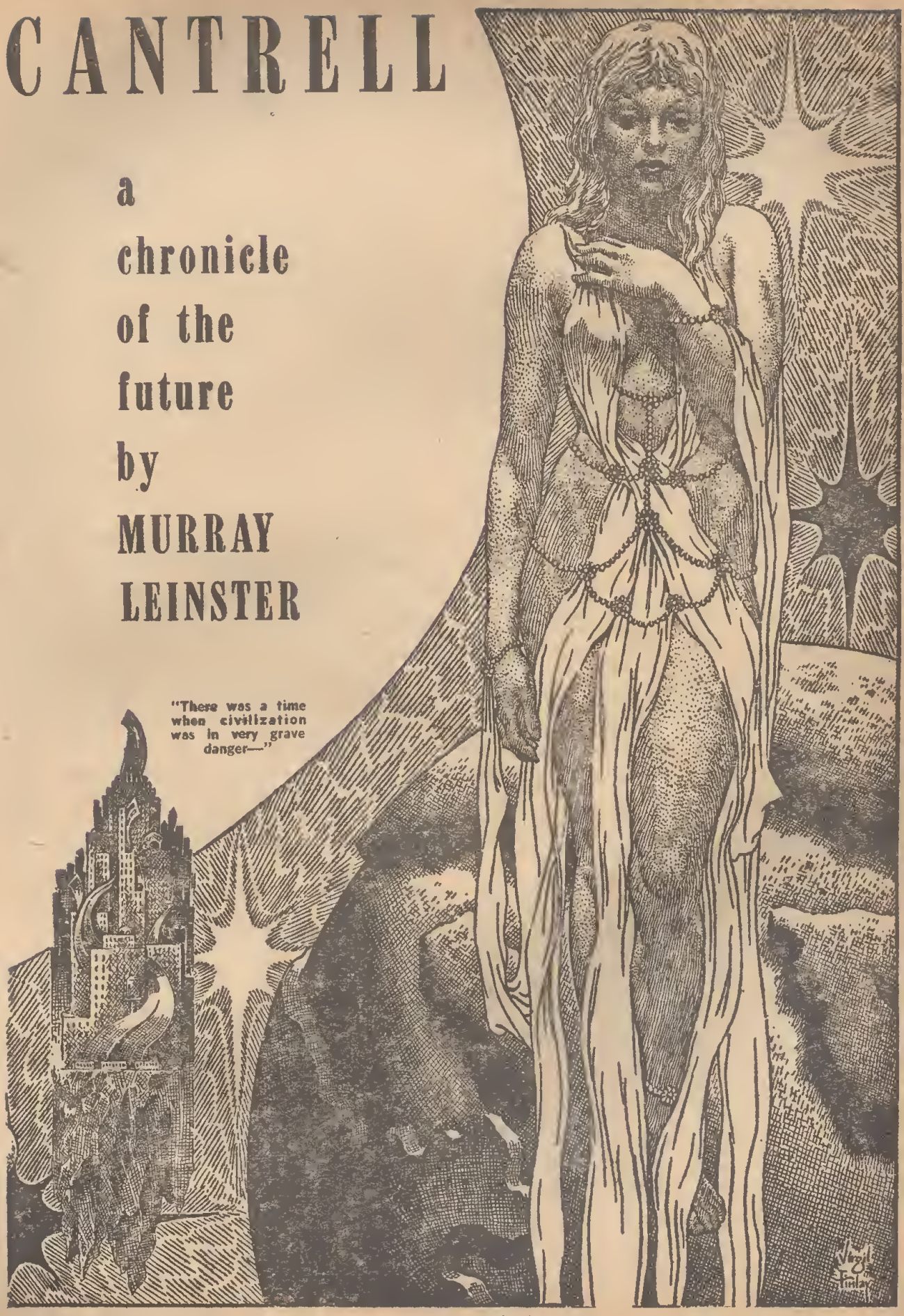
SOON the Earth Government technicians began to bring out their own new

Super-scientist Jugg planned to enslave the world with his new force-field torpedo, but you can't enslave those who love freedom more than life itself!



CANTRELL

a chronicle of the future by MURRAY LEINSTER



devices. There were robots which could not be killed by Total State radiations. They did enormous damage before they could be crippled. There were rockets which arched beyond the atmosphere and dived down behind the neutron-screens. There were others. But the war was almost a stalemate of destruction until Pittsburgh was wiped out.

Rod Cantrell was then a technician, G2A grade, and he was flying a new type of jet-plane over Pittsburgh when disaster struck. It was a singularly quiet and undramatic occurrence. It involved no fireworks. It did not affect a single one of the delicate instruments on the jet-plane's instrument-board. Rod Cantrell was right above the city when it was destroyed, and he didn't see it or know anything about it until he happened to look down.

It was an unusually bright, clear day and the city stretched for sprawling miles below him. It straddled its river and overflowed the nearby hills in the sunshine. It was clean and crisp and brightly glowing in the middle of a perfect day.

Then, without any warning, the city simply wasn't there any longer. It vanished between two heart-beats. In its place was a monstrous hole, three miles across and a mile and a half deep. And there was no violence, no tumult, no indication of where the city and some tens of cubic miles of rock and earth had vanished to. There was no burst of energy of any sort. One instant there was a city, and the next there was a hole more gigantic than had ever before been created by men. And that was all.

Three days later there was still no explanation. A river poured down the edge of the incredible chasm, and a sizable lake was forming at its bottom. Helicopters were still examining the cleanly-sheared-off bedrock, looking for radio-activity, signs of fusion, or some sort of clue as to what had happened. But there wasn't even the beginning of comprehension.

Four days later, Rod Cantrell was shot down over the Total State lines. The disappearance of Pittsburgh was almost certainly a Total State trick, but there was no certainty even of that. Still, Rod had volunteered for a suicide mission to try to destroy the Total State research laboratories from which the new weapon—if it was that—had certainly come. Also, there were some new devices that needed to be tested in action.

His plane, it was believed, should be proof against the anti-catalyst beam that had reinforced the neutron-screens as Total State defenses. But something else hit him, his plane dived like a plummet for earth, and Rod was so busy sending back instrument-readings for a clue to the new weapon and making sure all his secret devices were melted past reconstruction that he failed to make sure that his ship would land nose-first. So it hit in a swooping crash, he was thrown clear as the plane went up in flames. He was captured alive, though unconscious.

It was days later when Total State guards marched him out of the Prisoner Interrogation Center in which he'd regained consciousness.

When he reached the open air it was deep twilight. He was handcuffed to one guard on his right side and another on his left, and four other guards with blasters tramped two paces behind.

He thought he was headed for gas-chambers or perhaps for a slave-labor factory to be worked to death. But his guards marched him almost half a mile through nearly empty streets in the new-fallen night, and then turned and marched him up long and stately steps. There were bright lights inside the building, and suddenly he knew where he was being taken. To the research-laboratory headquarters of the Total State.

At the realization, Rod Cantrell's inwards seemed to dissolve into a churning mass and he went deathly sick. Not at the certainty of death—he expected that—but because he was a technician, grade G2A, and it was treason for him to be alive in the hands of the enemy. And he knew what he could expect.

There were salutes. Passwords. Written orders for his delivery here. If there had been the faintest chance for him to force his guards to kill him, he'd have seized it instantly. The robot psychometers at Prisoner Interrogation had somehow turned him up as a technician when they performed the grisly mathematics which normally determined whether a prisoner should be gassed or sent to a slave-labor factory.

HE could expect to be handed over to psychologists, now, who would crack his brain as they might crack a nut, and turn him into a blank-faced automaton who would answer any and every question which was asked him about the secret military devices

of his army. And the balance of success in battle was so precariously poised that anything might upset it. His treason in falling alive into enemy hands might mean disaster to the Earth Government.

His guards marched him down a long corridor. A turn to the right. A turn to the left. There were bright lights everywhere and innumerable barriers to pass. Then came a door and a vast hall with cords hanging by dozens from featureless spots on the wall and something torpedo-shaped and glittering in the center of the floor. There was a desk and an easy chair. A small man with a disproportionately large head sat luxuriously in the easy chair, smoking a cigar. He regarded Rod with humorous intentness, and then nodded to the guards.

"There are rings on the floor," he said placidly. "Shackle him to them."

Two guards came up and held Rod's right arm fast. Two others held his left. They removed the handcuffs. They shackled him to rings fastened to bolts sunk in the floor. As they let go his arms, Rod made a savage and murderous attempt to seize a guard and force the others to kill him to save the guard's life. But they were prepared for such an attempt. He failed.

The guards retired. The small, big-headed man smiled tolerantly at Rod who glared back with raging, defiant eyes, as he swayed at his shackles.

"You are impatient," he said reprovingly. "You should wait to hear what I intend to do with you. Would you like to be released and sent home?"

Rod snarled. As a precaution, he must try to make the psychometers seem mistaken, and to appear stupid and intractable. He bent and examined his leg-irons furiously. The little man cocked his head on one side and watched brightly until Rod stood up, his nostrils distended.

"You are chained fast," said the little man amiably. "Perhaps you will listen? I am Jugg. Have you heard of me?"

Rod growled. Of course he had heard of Jugg. Jugg was the one man in the Total State of whom the rest of the world was honestly afraid. In a war of science, scientists were weapons, and before the war Jugg had been considered the greatest scientist on Earth. Undoubtedly he had devised the neutron-screens and the death-tide and the magnetic flares and most—at least—of the weapons which still made the Total State formidable and might make it invincible. Jugg had created the weapons which had made the revolt possible—and might make it successful.

"Sure I've heard of you," snapped Rod. "So what?"

"That is good!" said Jugg almost happily. "Now, there is something we wish your leaders to know. I, Jugg, have made a great discovery. It is probably the most splendid achievement of the mind of man. Already we have used it. You know what happened to Pittsburgh, in your country?"

Rod did not answer, directly. He only snarled again.

"Ah! I see that you know!" Jugg rubbed his hands. "But you do not understand! So I will tell you. We of the Total State can destroy the earth if we choose. But we prefer to rule it. So it appears that we must explain to our enemies the utter hopelessness of resisting us. When they have no hope, they will submit."

Rod Cantrell knew otherwise. The destruction of Pittsburgh had no explanation, in the world beyond the Total State. But if there were, actually, only a choice between submission and destruction, a good deal of the outside world would choose destruction.

"It is to be your mission," explained Jugg benevolently, "to convince your people of their helplessness. You will serve the Total State by saving us some hundreds of millions of slave-laborers whom otherwise we would have to destroy."

"I think," said Rod, "you've picked the wrong man."

BUT Judd only beamed.

"I asked for someone with technical ability and high intelligence," he explained. "The psychometers said you had both. We of the Total State would not have risked an intelligent man in combat! But it serves us. I shall give you the theory of our new weapon, I shall convince you that the theory is also a fact, and I shall return you to your Headquarters to explain that submission to us is inevitable. We may have to destroy other cities to bear out your tale—we expect to—but it may not be needful to exterminate all of humanity outside our borders. We would deplore that!" he added jovially.

"I," said Rod savagely, "wouldn't deplore the extermination of everyone within your borders!"

Jugg chuckled.

"That is the normal hatred of the inferior for his superior; the hatred of a wild animal for the trapper who will presently subdue it. But our psychologists are already working upon the problem of conditioning subject populations to abject obedience; it is a problem which has replaced their former task of offensive psychological war. The change was made when I revealed the discovery which is certainly the greatest achievement of the human brain."

Rod Cantrell regarded him with tight-lipped defiance, his ankles chained to rings set in the floor of this highly civilized hall.

"I have devised," said Jugg proudly. "a force-field which will actually do what other men have not even conceived of. I have proved that objects remain in our three-dimensional universe only because they are linked to each other. They are held here by their gravitational and magnetic and electrostatic fields, which exist even in the emptiness between island universes. And when those fields are shut off—when an object has no longer any link to the rest of our universe—it vanishes into another set of dimensions or an other-space in which there are not even stars. And I have devised a force-field which cuts those links to the universe we know!"

Rod Cantrell snarled at him.

"What's this? Comedy? Or are you crazy?"

Jugg grinned.

"You pretend, eh? The psychometers said you were intelligent. I think you understand me! You can see that if a man were no longer anchored to the earth by gravitation, he would drift off into space, into the frigid vacuum between the earth and moon. And if he were not linked to the sun by its magnetic field, he would drift away into the emptiness between the stars. Not so? And if the stars themselves did not hold him—withered and frozen and lifeless in the void—he would vanish utterly. He would go into some other universe, swirling into a strange time-stream perhaps, ceasing to exist as a bubble bursts. In a strange space, a strange time, a strange cosmos in which he might be the only object in hundreds of millions of light-years of distance." Jugg grinned more widely. "That is where your Pittsburgh has gone."

He pointed to the glistening metallic object in the center of the hall. It was metallic and shaped like a torpedo some twenty feet long. Afterward, Rod Cantrell was to wonder why the torpedo shape had been chosen.

"That is a duplicate of the device which destroyed Pittsburgh," said Jugg amiably. "In it there is a generator of my force-field, which cuts off every effect and every field that other matter can produce. It severs every link between itself and the earth and sun and stars. It becomes no longer a part of our universe. It enters a set of dimensions so alien and so unthinkable to us humans that we would become gibbering maniacs from its very strangeness and horror. And all because of my force-field, which your stupid scientists have not even conceived of!"

Rod Cantrell's eyes narrowed momentarily. A field to cut off gravitation and magnetism and electrostatic stress was not so novel as Jugg seemed to think. Jugg's devices—especially his magnetic flare—had made necessary some way of neutralizing magnetism. The tidal death had been checked by a projected field-of-force which cancelled out electrostatic stress.

AND as a matter of course the generators had been designed to be adjustable. They could combat any other type of space-strain that Jugg might seek to utilize. But the Earth Government's generators had been designed to handle single space-effects, according to need. There had been no thought of trying to nullify all space-strains at once.

It would have seemed a self-defeating idea for the very reason Jugg boasted of—that such a generator would no longer be held to earth or sun or stars, and could never be held in position on a revolving planet because there could be no way to anchor it in place. Any foundation, any support, would be sheared through like the rocky foundation under Pittsburgh. . . .

But Rod Cantrell sneered at Jugg, who was the only man the rest of the world actually feared.

"You're talking nonsense," he said scornfully. "Suppose you did make a field like that! You couldn't do anything with it! It couldn't be controlled!"

Jugg chuckled.

"Ah, now you reveal the intelligence the psychometers reported! You are quite right. A field which puts its generator in another set of dimensions, or in another universe from which it cannot return—that would be useless. But suppose I make, in addition, a

force which is not found in nature? Suppose I make a tractor-beam which I do not allow my force-field to nullify, and use it as an anchor? Suppose my generator goes into another set of dimensions, but remains anchored even in that other-space to some object on this earth? Suppose I make a tractor-beam which goes through my force-field and draws my generator to the city of Pittsburgh?"

Rod Cantrell sweated suddenly. It was cold sweat. A field to neutralize all the normal effects of matter was a possibility, to be sure. And if such a field surrounded a generator, the generator and anything else inside the field would vanish from human ken—as Pittsburgh had vanished! And if a generator and a tractor-beam apparatus could be built into a torpedo . . .

"If you could do that," said Rod Cantrell scornfully—but he felt icy cold all over—"you could focus your tractor beam on Mars, and turn on your force-field, and you'd be drawn to Mars through other-space. You'd have a space-drive. But you haven't!"

Jugg chuckled.

"You are clever, my friend! You pretend to disbelieve, but I see the sweat glistening on your skin! Space-drive, eh? Ah, yes! We shall make space-drives, to be sure! But first we make this planet ours. First we make all other men recognize the sublimity of our blood, the truth of our right to rule. We make all other races our subjects. And then we colonize the stars and make all the universe our own possession! But first—you understand now how we destroyed Pittsburgh?"

Rod Cantrell shook his head. He did know, now, but he would not admit it. Something was coming, presently. Jugg would not have had an ordinary prisoner brought to him and shackled to slave-rings in the floor, merely to lecture him upon the greatness of the Total State.

"I took a torpedo," said Jugg happily. "And I set its tractor-beam so that all of the city of Pittsburgh was linked to my torpedo by its attraction. And then I set a mechanical device to turn on the force-field which shut off all other links of all other matter to my torpedo—and I stood back. You see?"

Rod Cantrell swore thickly.

"And," said Jugg joyfully, "and as I and all the cosmos except Pittsburgh ceased to have any link to my torpedo, it vanished from sight and all possibility of detection. It was in an other-space which is parallel to our own, but which seems to be empty. Yet it was still drawn toward Pittsburgh in this universe and this space, so that it passed through other-space until it reached Pittsburgh in this space.

"And since Pittsburgh was linked to my torpedo, it could enter the force-field which nothing else could enter. And it did. But once it had entered, the rest of the cosmos had no link to it. So Pittsburgh ceased to exist in the dimensions we know. Perhaps—I'm not sure—its stay in that other universe is not permanent. Conceivably, just as matter in my force-field seems to fall of its own accord into that other universe, so it may fall back into our universe when the generator wears out or stops. But where? Ah, that is a matter for speculation! Perhaps ten million light-years from Earth. Surely no human being will ever know!"

HE LAUGHED. Rage so terrible as to be madness filled Rod Cantrell.

"And I shall show you how it happens," said Jugg, with a bright smile.

He was a little man. He went tripping across the smooth floor to the glistening, torpedo-shaped object in the center of the hall. He opened a small port in its side and climbed within. There was a pause, while he made adjustments to apparatus within.

Then, suddenly, the silvery thing changed color. The light upon it did not alter. It did not glow. Its inherent color changed, like a chameleon's hide. It went bluish, then yellow, then orange—when it seemed to have turned to gold—and then it passed through all the shades of red to a color which was beyond all color. And then it faded from sight. It simply wasn't there.

Then, quite abruptly, there was a sudden puff of air and the vanished object was solidly on the floor within three paces of Rod Cantrell. Its nose touched the elaborate desk at which Jugg had sat. There were clanking noises inside and the slamming of something metallic which seemed to lock. A pause, and then Jugg climbed out of the reopened port. He rubbed his hands.

There was no question of trickery. The torpedo had moved no more than twenty paces, but there was nothing of the conjuring-trick about it. For one thing, the generators Earth Government scientists had made to fight Jugg's creations emitted just such changes of color when their fields were

turned on.

"You see," said Jugg, beaming, "how it works! I got into the torpedo and focussed my tractor-beam upon my desk. Then I turned on the force-field. For a very little time I was in other dimensions, in a universe parallel with but not our own. But by my tractor-beam I was anchored to my desk and drawn to it. Had my force-field been large enough, the desk would have entered the field and it and I and the torpedo would have vanished forever.

"But I had made the force-field small, for my own safety. The desk could not enter it, so I was anchored to it, and when I turned off the force-field I returned to this set of dimensions and to our universe.

"It is so," he added blandly, "that we store these weapons. All about the walls, here, are such torpedoes anchored to the fabric of this building, with cords which run from their controls to the universe of men. I pull a cord, and I have a weapon with which to destroy another city of the enemies of the Total State. Do you not see that we can destroy all of Earth, if we chose, so that it must submit to us?"

Rod Cantrell's eyes went around the walls. He saw cords dangling. Pull one of those cords, and a generator in a tiny separate space would turn off, and there would be another such torpedo as this.

Jugg chuckled.

"In this one hall," he said radiating goodnature, "is such power to destroy as never existed before. And it is all so tranquil! One by one we retrieve our weapons from another set of dimensions—another space—and send them to carry our enemies to the emptiness from which we brought them. Our enemies will never return!"

Rod Cantrell said thickly, "You fool! With all the stars for conquest, you have to fight men! But what's the rest of it? You didn't bring me here to gloat over me! What happens now?"

Jugg beamed at him. He pressed a button.

"Now I send you to tell your compatriots. I put you in this torpedo. I have set its controls—tractor-beam and all—and locked them so that you cannot change them. This torpedo will vanish from sight and appear in your city of Washington. It is automatic. Having arrived in Washington, you will release yourself—quickly—and tell your compatriots what I have told you. You will have to be quick, because my torpedo will melt itself quickly lest our enemies learn its secrets. Then we will destroy more cities, and your compatriots will know the hopelessness of resisting us, and will submit. And when we have organized Earth to our liking, we will set about the conquest of the stars. But Earth comes first. We, who can conquer the stars cannot do less than rule our own planet!"

ROD CANTRELL found the palms of his hands bleeding, so fiercely were his fingers clenched. Anger and a sick horror held him motionless. Jugg and his kind did have all the power he described. Rod Cantrell, himself, could almost duplicate one of these torpedoes from knowledge already existing in the outer world. But he knew that a part of what Jugg said was lies. He spoke of automatic machinery in the torpedo. That was a lie. A generator blocking off space-stresses, of necessity was itself in so terrific a magnetic field that no automatic machinery could function. Generators of this type had to be worked by manual controls. They had to be! So a torpedo had to be worked by a man inside it. No other control was possible!

Therefore this tale of Jugg's. He, Rod Cantrell, was told that he bore a message to his compatriots. Actually, he would turn on the device which first would take him to a city of his own nation, and then would engulf it—and there would be another chasm like that of Pittsburgh where another city had been. It was the pattern of Total State psychology that a prisoner of war would be used to control a weapon against his own side.

Rod Cantrell said defiantly: "We'll beat you somehow!"

But he had no idea how. There were tramping footsteps. The six guards who had brought him here returned. They halted in clashing unison. Jugg grinned happily at the prisoner. He did not speak to the guards. He merely nodded to them.

Two of them seized Rod's right arm. Two others seized his left. Two released his legs while the others held blasters ready. They marched him the three paces to the torpedo. They heaved him off his feet and put his legs inside. They shoved him into the cockpit of the torpedo. They watched as he settled himself, gray-faced and raging. Then they turned and tramped out, keeping step with vast precision.

"They have been conditioned," said Jugg

appreciatively. "They have no thoughts which the Total State does not wish them to have. Now I give you your directions! There are two controls left unlocked for you to use. You see them?"

Rod Cantrell's eyes took in the interior of the cockpit. There was a metal panel before him. It had been opened. Now it was closed and locked fast. There were two small wheels which doubtless could be turned. One was marked, *"Turn to start."* The other: *"Turn for release after arrival."*

"You turn the starting-wheel," said Jugg, "and the field will go on. Immediately you will be in other-space, yet linked to the city of Washington by the tractor-beam I have fixed upon it. In that other-space—outside of our universe altogether—you will be drawn to the neighborhood of Washington. And when you have arrived, you will turn the release-wheel and my field will go off and you will be back in our universe, in the city of Washington. And you will leave the torpedo very quickly and it will melt itself behind you. Then you will tell your compatriots of their futility. That is all."

Rod Cantrell snarled: "All but the way we'll get back at you!"

Jugg, giggling, closed the door. A small electric bulb in the ceiling of the cockpit, began to glow. There were iron walls all about. He noticed two small wheels. No, they weren't controls. Rod Cantrell had no power whatever over the torpedo. He was expected to turn one control, and he knew that in so doing he would doom a city of the outer world. He was instructed to turn the other control, but he grinned in gray-faced fury. The Total State would not release him. There would be—

Yes, up near the ceiling there was a small hole. And it was a part of the science which fought the Total State to understand Total State psychology.

A technician of G2A grade could read beyond appearances.

With absolute certainty, Rod Cantrell knew what would happen after he had turned the first control and destroyed a city. If he should turn the second control, a deadly gas would pour out of that opening up at the top of the cockpit, to kill him. That would be to keep him from any conceivable chance of telling his fellow-men, trapped in an unknown universe to which the torpedo would transport them, what would happen when the generator was turned off.

THAT was the pattern. And Rod Cantrell had absolutely no choice. He could turn the two controls in succession—and die with some millions of his fellow-men—or fail to turn either. In the latter case some other prisoner would be fooled into carrying out the mission he refused. And if Rod Cantrell did refuse, suspicion would be aroused that he knew more than he should, and the Total State psycholoigsts would set to work to crack his brain and extract everything from it that would be useful.

It was very quiet in the cockpit. It was two feet wide and four feet long and no more than three and a half feet high. It was to be Rod Cantrell's coffin. Of course there was no ventilation. He would suffocate here in twenty minutes. If he did not carry out his orders, Jugg need only wait to be sure that he died, in the most closely guarded building of the most invincibly defended section of the impregnable capital city of the enemies of the rest of the earth.

There was exactly one thing he could do—help the Total State to enslave the rest of humanity by destroying millions of his compatriots. The psychological trickery by which he had supposedly been fooled was simply the most efficient way to make him work Jugg's will.

But the whole set-up was as cold-bloodedly unbeatable as any plan for murder could possibly be. Rod Cantrell—scowling in the space which was to be his coffin—did not even think fleetingly of saving his own life. He did not even hope, now, to prevent the destruction of all human liberty. But he had been sent on a suicide mission and he tried fiercely to make a plan by which his death would not be a complete triumph for his enemies.

He tried the two controls, very delicately. The "start" control was free. The other? Yes. It stirred, yet it resisted and actually moved something unseen.

He moved his leg to pound on the inside of the metal door which closed him in. He pounded again, and again. The door could be opened from within, of course. Jugg had opened it from within. But the handle was not difficult to miss. So Rod Cantrell pounded savagely on the inside of the door. He tried to sound like a man in savage rage. But everything would depend on the time-lapse.

He had counted to seventy when there were noises. Jugg himself was opening the

port. It was too short a time for him to have summoned the guards. The door swung wide and Jugg looked in, his eyes bright and mocking. Rod Cantrell snarled at him.

"What's this? A joke? Nothing happened!"

Jugg regarded him with his head on one side.

"I, Jugg, do not joke. You followed my instructions?"

"I turned that all the way!" rasped Rod. "It turned free. It's loose!"

He pointed to the starting control. It was only a two-inch wheel. Jugg glanced at it. He peered more closely. More closely still—

Rod Cantrell did three things at once. He slammed his right hand forward with every ounce of strength, trapping Jugg's head against the door-frame of the cockpit. He turned the "Release" control. And he held his breath. Specifically, he held his breath.

Silvery vapor gushed from the hole in the bulkhead above him. The cockpit became filled with an almost palpable fog. Jugg wriggled and gasped in awful terror—and the gasp did the trick. His lungs filled with the pearly mist. He kicked convulsively. Once only. Then he went limp.

Rod had been right that the reward for destroying his fellow-citizens would be death. He had managed to share that reward with Jugg, which was a matter for exultation. But now he fought desperately to do more. He continued to hold his breath. The vapor was heavier than air. It flowed with infinite deliberation out the lower part of the door, cascading in pearly deadliness over the contours of Jugg's body.

Presently there was a little clear air at the top of the cockpit, but Rod did not dare to risk it. He managed to wriggle his head out the top of the door. He gasped horribly, but the air was clean. He saw the poisonous mist settling with a vast, tranquil lack of haste to a thin layer of haze upon the floor. It spread slowly, slowly at its edges.

There was silence. Rod's position was strained and painful. Even the small body of Jugg was a terrible burden. But he would not drop it.

LONG minutes passed. Then he dared draw back. He dragged Jugg's body across his knees. He had not hoped for more than Jugg's death—in itself the equivalent of a military defeat for the Total State—but now a sudden possibility loomed ahead—a hope so blindingly bright that he dared not think of it but would only let himself concentrate on the things to be done.

He rifled Jugg's pockets and found a key. This key, he guessed, would open the panel by which the target of the torpedo was chosen—it would reveal the controls by which Jugg had been able to move this torpedo only across this hall. There was a blaster—a tiny affair of a new type to Rod. Probably it was of the very latest and most super-deadly design.

Rod's hands trembled as he tried the key. There was only silence outside the torpedo. In a Total State, the only way to be safe is to be irreplaceable. Jugg would not want others to know how to work his torpedoes. The panel opened.

Rod stared in. His heart leaped. The controls were simple—sheer stark necessities only. And Rod could understand, certainly, the control for the force-field, because it had to be so much like the manual control for the generators Earth Government technicians had devised. And if the force-field were made small—as Jugg had had it when he moved across the hall—

No! It should be larger than that, larger from the beginning!

Rod's hands shook, but he made adjustments. Then there were shouts. Someone had looked in and seen Jugg's body on the floor where Rod had let it drop. There were many footsteps and more shouts.

Rod Cantrell turned the "Start" control. He stared out of the port. All the world changed color. A film of red spread swiftly out from the torpedo. Yellowness followed it, and blue, and then so deep an indigo that it was almost total darkness, and then a violet that deepened to black. And then—

He had no weight. There was no light. There were only panic-stricken screamings in utter blackness. But he seemed to fall, and fall, and fall.

Then there was a shock, and the sound of breaking walls and crumbling stone, and the screamings became the cries of madmen. Rod Cantrell reached in the open panel and turned off the force-field.

He expected, really, black emptiness and unfriendly stars, and for the air to puff from his lungs into the vacuum of interstellar space. But there was sunshine—though it had been night in the enemy capital—and walls reeled and fell all about him and blue sky showed beyond.

Crazed figures raced toward him and he used the tiny blaster from Jugg's pocket and even then was appalled at the destruction its bolts produced. And then the ceiling fell in and something struck the torpedo a titanic blow!

* * * * *

He opened his eyes to look into the muzzle of a blaster, but the face behind it was honestly grim and wholesomely savage, and the uniform was the same as his own. He grinned feebly, and gave a code-word, and then waited while men brought torches and cut through the crushed walls of the torpedo to free him.

The torpedo didn't matter. There were more to be salvaged from the shattered laboratory about him—anchored to separate parts of its walls, and in whatever other universe the force-field opened. Anyhow, now that Rod Cantrell knew the basic idea, it would be easy enough to build torpedoes—and space-ships—for the Earth Government.

Rod Cantrell felt very, very good. His face was fixed in a satisfied grin as they lifted him onto a stretcher and carried him away. When Jugg made the torpedo vanish and reappear in another place in the laboratory hall, its force-field had been very small. It had carried with it no more than an inch or two of air outside its hull. But when Rod Cantrell turned on the field, it would have been very small, but it would have grown as the torpedo fell through other-space toward Washington.

WHEN it reached that city, the force-field would have been huge—large enough for the city to move into, when of course it would be cut off from the universe of men. Rod had needed only to change the controls for the size of the force-field. He'd set them so that the force-field would include the research laboratory of the Total State from the very beginning. But so it would not get any larger.

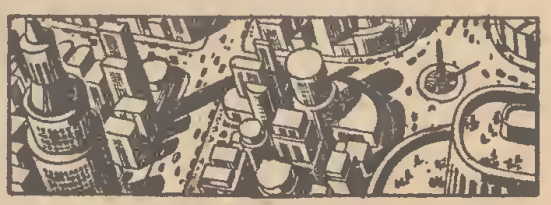
That was all that was needed. Laboratory and torpedo together had gone into other-space and together had been drawn to Washington. But the field which held them was too small for the city to enter, so they had been anchored to Washington—like the torpedo, in Jugg's demonstration, to his desk—until the force-field was cut off. And the result was that Rod Cantrell had not only returned to his own country without destroying a city, but he'd brought the enemy research-laboratory with him, with its staff of scientists, and he'd brought also all the store of torpedoes made ready for the conquest of Earth.

So-o-o—half a dozen of the Total State's torpedoes ended the war. That State fell apart into a horde of vociferously protesting individuals, each one of whom claimed that he had been forced to do all that he had done, and that he, personally, was a loyal citizen and simply loved the Earth Government.

And Rod Cantrell? He was presented with many medals, but he asked for something better. And as a technician, G2A grade, he was qualified, so he supervised the building of a newer, and superior, and much more useful torpedo. And he was at the controls when its tractor-beam fixed on Mars, and then its force-field went on—close to its skin—so that the torpedo and Rod Cantrell went into other-space and went hurtling through that other-space's emptiness toward Mars, which of course was too large to enter the force-field when the space-ship should reach it.

He was the first man on Mars. And on Venus. And Calypso. And Neptune VIII. And he led the expedition that colonized Vega II. Every schoolboy knows that Rod Cantrell was a very famous man.

But there was a time when he wasn't, and when civilization was in very great danger indeed. This is the story of Rod Cantrell at that time.

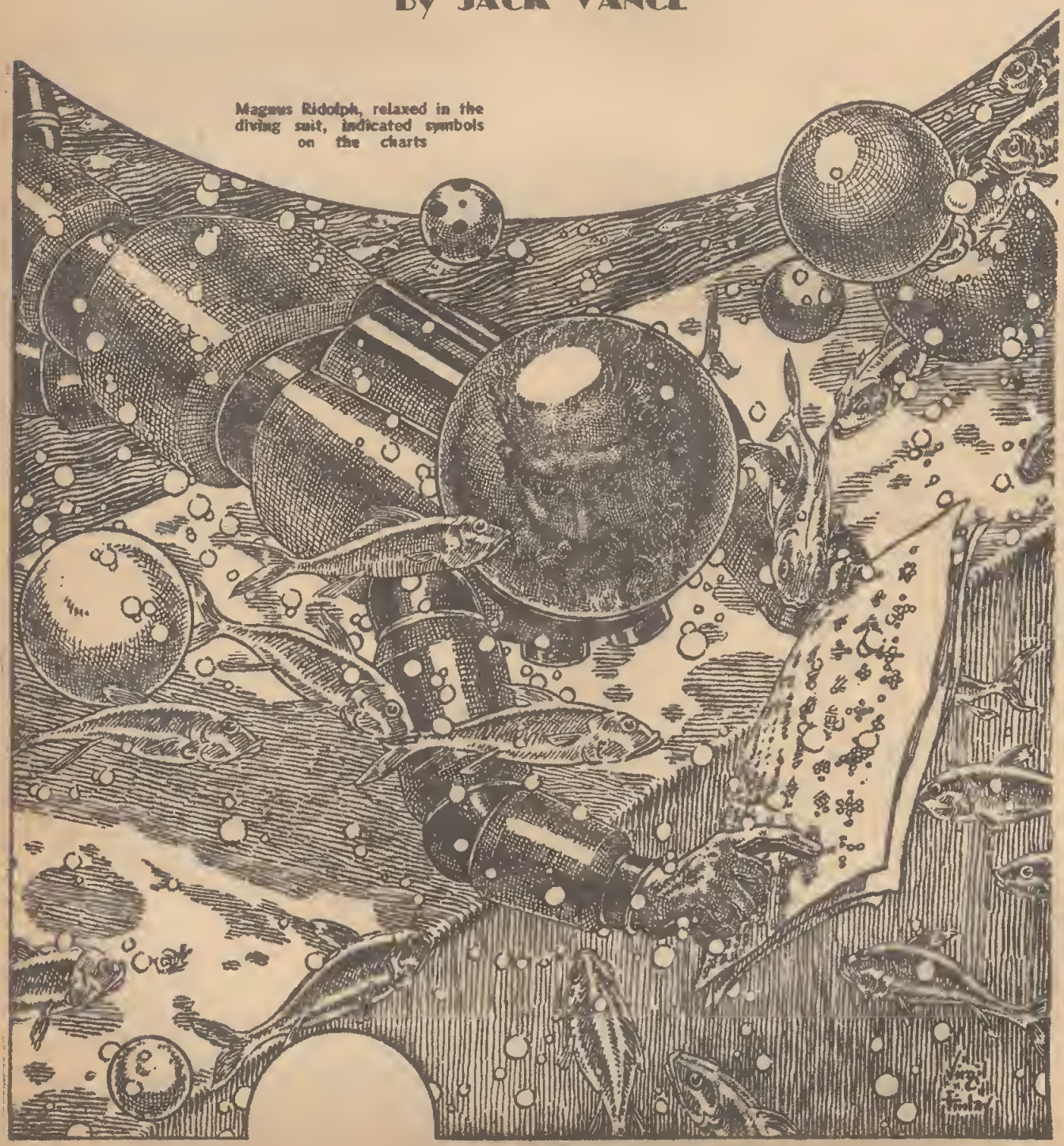


Look forward to THE BLACK GALAXY, a complete Rod Cantrell novel by MURRAY LEINSTER—coming in the next issue!

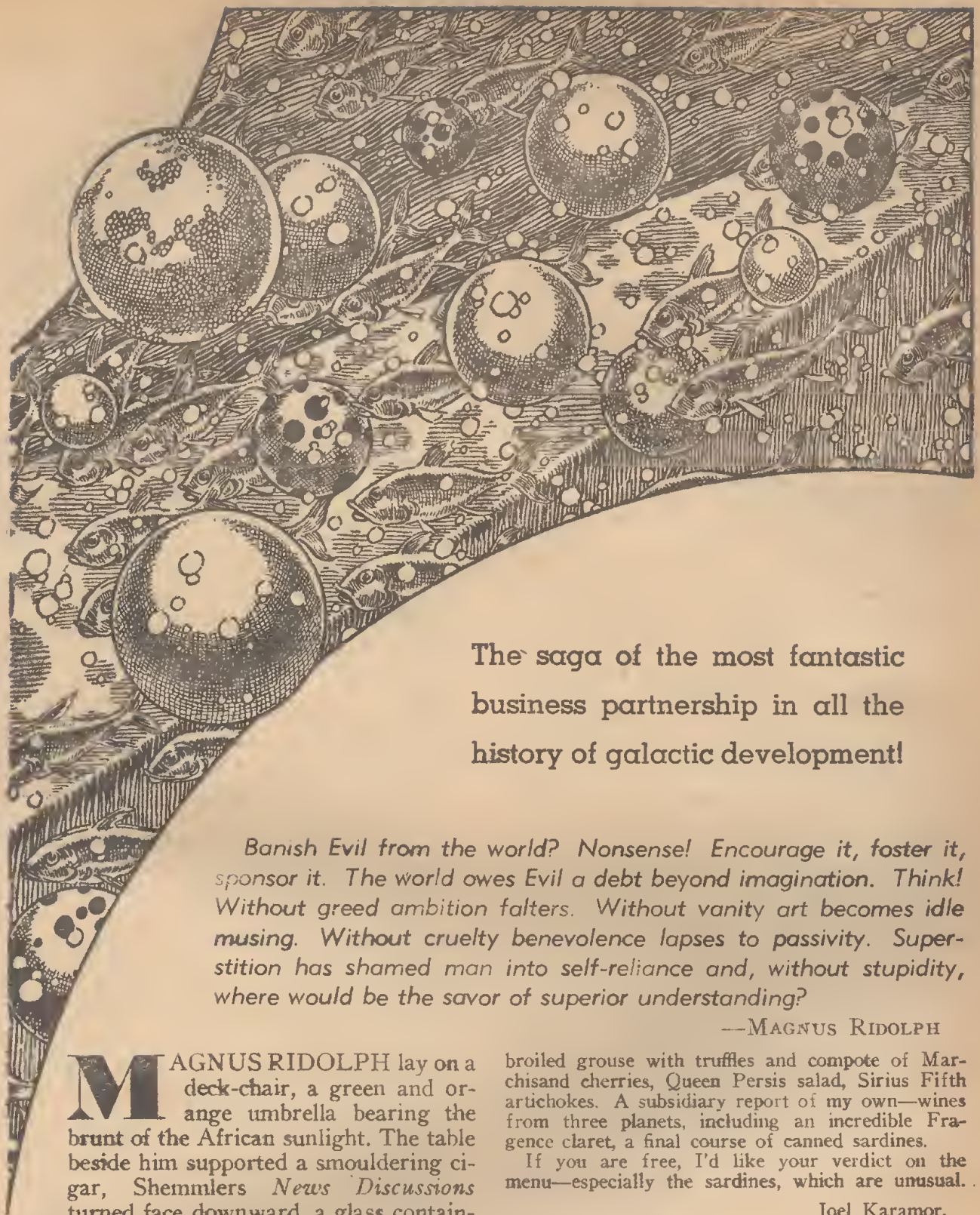
The Sub-Standard SARDINES

A Magnus Ridolph Novelet

By JACK VANCE



Magnus Ridolph, relaxed in the diving suit, indicated symbols on the charts



The saga of the most fantastic business partnership in all the history of galactic development!

Banish Evil from the world? Nonsense! Encourage it, foster it, sponsor it. The world owes Evil a debt beyond imagination. Think! Without greed ambition falters. Without vanity art becomes idle musing. Without cruelty benevolence lapses to passivity. Superstition has shamed man into self-reliance and, without stupidity, where would be the savor of superior understanding?

—MAGNUS RIDOLPH

MAGNUS RIDOLPH lay on a deck-chair, a green and orange umbrella bearing the brunt of the African sunlight. The table beside him supported a smouldering cigar, Shemmlers *News Discussions* turned face downward, a glass containing ice and a squeezed half-lime. In short, a picture of relaxation, idyllic peace . . . The transgraf clanged from within.

After a restless interval Magnus Ridolph arose, entered the apartment, took the message from the rack. It read:

Dear Magnus,

My chef's report on tomorrow's dinner—broiled grouse with truffles and compote of Marchisand cherries, Queen Persis salad, Sirius Fifth artichokes. A subsidiary report of my own—wines from three planets, including an incredible Fragence claret, a final course of canned sardines.

If you are free, I'd like your verdict on the menu—especially the sardines, which are unusual.

Joel Karamor.

Magnus Ridolph returned to the deck-chair, re-read the invitation, folded it, laid it on the table beside him. He rubbed his short white beard, then, leaning back in his deckchair, half-closed his eyes, apparently intent on a small sailboat, white as the walls of Marrakech, plying the dark blue face of

Lake Sahara.

He arose abruptly, crossed into his study, seated himself at his Mnemiphot, keyed the combination for *Sardines.*

For several minutes information played across the screen. Very little seemed significant and he found no notes of his own on the topic. The *sardina pilchardis,* according to the Mnemiphot, belonged to the herring family, swam in large shoals and fed on minute pelagic animals. There were further details of scale pattern, breeding habits, natural enemies, discussion of variant species.

Magnus Ridolph wrote an acceptance to the invitation, ticked off Joel Karamor's address code, dropped the message into the transgraph slot.

KARAMOR was a large healthy man with a big nose, a big chin, a brush of brindle-gray hair. He was an honest man and conducted his life on a basis of candor, simplicity and good-will. Magnus Ridolph, accustomed to extremes of deception and self-interest, found him a refreshing variant.

The dinner was served in a high room paneled in Congo hardwoods, decorated with primitive masks hung high in the shadows. One glass wall opened up on a magnificent expanse of clear blue twilight and, twenty miles south, the loom of the Tibesti foothills.

The two sat at a table of burnished lignum vitæ, between them a centerpiece of carved malachite which Magnus Ridolph recognized for a Three-Generation Work from the Golwana Coast of the planet Mugh—a product of father, son and son's son, toiled over a hundred years to the minute.*

The dinner surpassed Karamor's usual standard. The grouse was cooked to a turn, the salad beyond exception. The wines were smooth and brilliant, rich but not cloying. Dessert was a fruit ice, followed by coarse crackers and cheese.

"Now," said Karamor, watching Magnus Ridolph slyly, "for our sardines and coffee."

Magnus Ridolph obliged with the wry face he knew to be expected of him. "The coffee, at least, I shall enjoy. The sardines will have to be of spectacular quality to tempt me."

*The catalogue of Pomukka-Dhen, last of the Golwana emperors, listed seven thousand Century pieces, 136 Millennium pieces, and fourteen Ten-Thousand-Year pieces. A rumor had reached Magnus Ridolph of a Hundred-Thousand-Year work nearing completion in the Backlands, a gigantic carved tourmaline.

Karamor nodded significantly. "They're unusual." He arose, slid back the panel of a wall-cabinet, returned to the table with a flat can, embossed in red, blue and yellow.

"It's yours," and Karamor, seating himself, watched his guest expectantly.

The label read: *Premier Quality. Select Sardines in oil. Packed by Chandaria Canneries, Chandaria.*

Magnus Ridolph's fine white eyebrows rose. "Imported from Chandaria? A long way to bring fish."

"The sardines are top-grade," said Karamor. "Better than anything on earth—delicacies of prime quality and they bring a premium price."

"I still should not, at first thought, imagine it profitable," was Magnus Ridolph's doubtful comment.

"That's where you're wrong," declared Karamor. "Of course you must understand the cannery expenses are very low, and compensate for the shipping costs. And then spacefreight is not especially expensive. Actually we're doing very well."

Magnus Ridolph looked up from the can. "We?"

"George Donnels, my partner in the canning business, and myself. I financed the proposition, and I look after the sales. He runs the cannery and fishing operations."

"I see," said Magnus Ridolph vaguely.

"A few months ago," continued Karamor, frowning, "he offered to buy me out. I told him I'd consider it. And then—" Karamor gestured toward the can. "Open it."

Magnus Ridolph bent over the can, raising a tab, pressing the lid-release button. . . . Bang! The lid flew high in the air, the contents of the can sprayed in all directions.

Magnus Ridolph sat back, raising eyebrows mutely at Karamor. He felt his beard, combing out the fragments of fish which had become entangled in the hairs.

"Spectacular indeed," said Magnus Ridolph. "I agree. What were the other tests you wished me to make?"

Karamor rose to his feet, circled the table. "Believe me, Magnus, that surprised me as much as it did you. I expected nothing like that . . ."

"What did you expect?" inquired Magnus Ridolph drily. "A flight of birds?"

"No, no, please believe me, Magnus. You must know I wouldn't indulge in a stupid joke of that sort!"

Magnus Ridolph wiped his face with a

napkin. "What is the explanation for the—" he licked his lips—"the occurrence?"

Karamor returned to his seat. "I don't know. I'm worried. I want to find out. I've opened a dozen cans of sardines in the last week. About half were in good condition. The rest—all tampered with, one way or another.

"In one can the fish were threaded with fine wires. In anohter the flesh tasted of petroleum. Another gave off a vile odor. I can't understand it. Someone or something wants to ruin Chandaria Cannery's reputation."

"How widespread is this tampering?"

"Only the last shipment, so far as I know. We've had nothing but compliments on the product up to now."

"Whom do you suspect?"

Karamor spread out his big hands. "I don't know. Donnels couldn't benefit, that's certain—unless he figured he could scare me into selling and I think he knows me better than that. I thought you might investigate—act for me."

Magnus Ridolph considered a moment. "Well—at the moment, so it happens, I'm free."

Karamor relaxed, smiled. "The import seals were all intact," he told his guest.

"And they are applied at the cannery?"

"Right."

"Then," said Magnus Ridolph, "it is evident that the mischief occurs on Chandaria."

MAGNUS Ridolph rode the passenger packet to City of the Thousand Red Candles, on Rhodope, Fomalhaut's fourth planet, where he took a room at the Ernst Delabri Inn.

He enjoyed a quiet dinner in the outdoor dining room, then hired a barge and let the boatman paddle him along the canals till long after dark.

Next morning Magnus Ridolph assumed a new character. Ignoring his white and blue tunic, he buttoned himself into a worn brown work-suit, pulled a gray cloth cap over his ruff of white hair. Then, crossing the King's Canal and the Panalaza, he threaded the dingy street of the Old Town to the Central Employment Pool.

Here he found little activity. A few men, a few nervous tom-tickers, a knot of Capellan anthropoids, one Yellowbird, a few native Rhodopians listlessly watched the call-screen. Prominent on the wall was a sign reading:

CANNERY WORKERS!
WANTED ON CHANDARIA!

—a notice which excited little attention.

Magnus Ridolph strolled to the assignment window. The velvet-skinned Rhodopian clerk bobbed his head courteously, lisped, "Yes, sir?"

"I'd like to try the cannery on Chandaria," said Magnus Ridolph.

The Rhodopian flicked him a seal-brown glance. "In what capacity?"

"What positions are open?"

The Rhodopian glanced at a list. "Electrician—three hundred munits; integrator-feed mechanic—three hundred twenty munits; welder—two hundred ninety munits; labor—two hundred munits."

"Hm," said Magnus Ridolph. "No clerical work?"

"At the present, no."

"I'll try the electrician job."

"Yes, sir," said the Rhodopian. "May I see your Union Journeyman Certificate?"

"My word," said Magnus Ridolph. "I neglected to pack it."

The Rhodopian showed blunt pink teeth. "I can send you out as a laborer. The steward will sign you up on the job."

"Very well," sighed Magnus Ridolph.

A cargo freighter conveyed the cannery recruits to Chandaria—a thick wobbly shell permeated through and through with the reek of hot oil, sweat and ammonia. Magnus Ridolph and a dozen others were quartered in an empty hold. They ate in the crew's mess and were allowed two quarts of water a day for washing. Smoking was forbidden.

Little need be said of the voyage. Magnus Ridolph for years afterward labored to expunge the memory from his brain. When at last the passengers filed, blinking, out on Chandaria, Magnus Ridolph looked his part. His beard was unkempt and dirty, his hair hung around his ears and he blended completely with his fellows.

His first impression of the planet was dismal watery distance, drifting patches of fog, wan maroon illumination. Chandaria was the ancient planet of an ancient red sun and the land lay on a level with the ocean—prone, a gloomy peneplain haunted with slow-shifting mists.

In spite of its age Chandaria supported

no native life more advanced than reeds and a few fern trees. Protozoa swarmed the seas and, with no natural enemies, the twenty thousand sardines originally loosed into the waters throve remarkably well.

As the passengers alighted from the hold of the freighter a young man with a long horse-like yellow face, very broad shoulders, very narrow hips, stepped forward.

"This way, men," he said. "Bring your luggage."

The newcomers obediently trooped at his heels, across ground that quaked underfoot. The path led into fog and, for a quarter-mile, the only features of the landscape were a few rotten trees thrusting forlorn branches through the mist, a few pools of stagnant water.

The mist presently thinned, revealing a huddle of long buildings and, beyond, an expanse of reeds and the glint of water.

"This is the bunkhouse for those of you who sleep," and the young man jerked his finger at the men and the anthropoids. "You go in and sign with the house-captain. You, Yellowbird, you, Portmar, and you, Rhodope, this way."

Magnus Ridolph ruefully shook his head as he mounted the soggy steps into the bunkhouse. This was probably the low point in his career. Two hundred munits a month, grubbing among the intimate parts of fish. He made a wry grimace, entered the bunkhouse.

He found an empty cubicle, threw his duffel-bag on the cot, strolled into the recreation room, which smelled of fish. Unpainted plyboard covered the walls, which were spanned by bare aluminum rafters. A cheap telescreen at the end of the room displayed a buxom young woman, singing and contorting her body with approximately equal vehemence.

Magnus Ridolph sighed once more, inquired for the house-captain.

HE WAS assigned to the No. 4 Eviscerator. His duties were simple. At intervals of about three minutes he pulled a lever which raised a gate. From a pond outside came a rush of water and thousands of sardines, swam serenely into the machine, where fingers, slots and air jets sorted them for size, guided them against flashing knives, finally flung them through a spray and out on a series of belts, where, still flapping feebly, they were tucked into cans by a line of packers.

These packers were mostly Banshoos from nearby Thaddeus XII—bulbous gray torsos with twenty three-fingered tentacles, an eye and a sub-brain at the tip of each tentacle.

From the packers the cans were fitted with lids, conducted through a bank of electronic cookers and finally stacked into crates, sealed and ready for export.

Magnus Ridolph considered the process with a thoughtful eye. An efficient and well-organized sequence of operations, he decided. The Banshoo packers were the only non-mechanical stage in the process and, watching the swift play of tentacles over the belt, Magnus Ridolph thought that no machine could work as quickly and flexibly.

Somewhere along this line, he reflected, the sardines had been, and possibly were being, adulterated. Where? At the moment no answer presented itself.

He ate his lunch in an adjoining cafeteria. The food was passable—precooked on Earth, served in sealed trays. Returning toward his post at Eviscerator No. 4 he noted a doorway leading out on a plank walk.

Magnus Ridolph paused, stepped outside. The walk, supported on piles driven into the morass, ran the length of the plant. Magnus Ridolph turned toward the ocean, hoping to catch a glimpse of the cannery's fishing fleet.

The mist had lifted somewhat, revealing endless miles of reed-covered mud-flats and a stagnant sea. The land proper was distinguishable from the mud-flats only by an occasional cycad which showed a dull frond to the great somber sun. It was a landscape bleak and inexpressibly dreary, a world without hope or joy.

Magnus Ridolph rounded the corner of the plant, came upon the concentration pond from which the fish were channeled to the eviscerators. He looked right and left but—except for a neat aluminum dinghy—not a boat of any sort was visible. How then was the cannery supplied with fish?

He turned his attention to the concentration pond, a shallow concrete basin, fifty feet by twenty, with a break in the wall facing the sea three feet square. Magnus Ridolph, stepping closer, saw that a set of long transparent bristles pointed through the opening, permitting fish to swim in, but preventing their escape.

And as he watched, the dull surface of the

ocean rippled. He caught the sheen of a thousand small fins, and into the basin darted first one fish, then a hundred, then a thousand and further thousands until the basin seethed and spattered with concentrated life.

Magnus Ridolph felt eyes on him. Lifting his head he saw standing across the pond the broad-shouldered young man with the long yellow face. He wore puttees, high field boots of nulastic, a tan jacket, and now he came striding around the pond toward Magnus Ridolph.

"You supposed to be out here? Or at work?"

"I am employed, yes," said Magnus Ridolph mildly. "I supervise a"—he coughed —"an eviscerator. But now, I have only just finished my lunch."

The young man's mouth curled. "The whistle blew half an hour ago. Get in motion, Pop, because we didn't bring you three light-years out here to see the sights."

"If, as you say, the whistle has blown, I shall certainly return to my duties. Er—whom have I the pleasure of addressing?"

"My name's Donnels. I sign your check."

"Ah, yes. I see," said Magnus Ridolph, nodding. He thoughtfully returned to the eviscerator.

His duties were light but monotonous. Open the gate, shut it; open the gate, shut it—occasionally break up a jam of frantic silvery bodies in front of the segregators. Magnus Ridolph found ample time for reflection.

An explanation for the mysterious adulterations seemed as far away as ever. The man who could accomplish the mischief most easily was George Donnels but so far as Magnus Ridolph could see, the plant seemed completely efficient. True, Donnels wanted to buy out Karamor's interest but why should he endanger the reputation of his own product?

Especially when he had such admirable raw material—for the fish, so Magnus Ridolph noted, were larger and more plump than the specimens displayed by his Mnemiphot. Evidently conditions on Chandaria agreed with them or possibly Donnels had stocked the world with only the most select fish.

Open the gate, close it. And he noted that the surge of fish down the chute formed a recurring pattern. First one fish—rather larger, this one, perhaps the leader of the shoal—then the thousands, dashing helter-skelter after him into the knives. There was never any hesitation. The instant the gate opened, in surged the shoal-leader, followed by the eager thousands.

THE races most numerously represented at the cannery were the Banshoos, Capellan anthropoids, men and Cordovan toricles, in that order. Each had its separate bunkhouse and mess-hall—though bunkhouse was perhaps a misnomer for the tanks of warm broth in which the Banshoos wallowed, or the airtight barracks of the Capellans.

After a shower and his evening meal, Magnus Ridolph wandered into the recreation room. The telescreen was for the moment lifeless and a pair of card games were in progress. Magnus Ridolph took a seat beside a stocky bald man with plump cheeks and little blue pig-eyes, who was reading the afternoon news-facsimile.

After a moment he laid the sheet to the side, stretched pudgy arms, belched. Magnus Ridolph with grave courtesy offered him a cigarette.

"Thanks, don't mind if I do," said the stocky man cheerfully.

"Rather dull isn't it?" said Magnus Ridolph.

"Sure is," and his new friend blew a plume of smoke into the already hazy atmosphere. "Think I'll take outa this jungle next ship."

"You'd think the company would provide better recreation facilities," said Magnus Ridolph.

"Oh, they don't care for anything but making money. These are the worst conditions I've ever worked in. Bare union minimum, no extras at all, whatever."

"A matter has been puzzling me—" began Magnus Ridolph.

"Lots of stuff puzzling me," sniffed his friend.

"How are the fish supplied to the cannery?"

"Oh," the man exhaled a wise cloud of smoke, "they're supposed to have bait in that pond. There's so many fish and they're so hungry they bite for anything. Donnels sure saves that way—gets the fish free, so to speak. Don't cost him a cent, far's I can see."

"And where does Donnels live?" inquired Magnus Ridolph.

"He's got him a nice little cabin over behind the laboratory."

"Oh—the laboratory," mused the white-bearded sage. "And where is the laboratory? I hadn't noticed it."

"She's off along the trail a little ways, down the shore."

"I see."

Magnus Ridolph presently rose to his feet and wandered around the room a moment or so. Then he slipped out into the night.

Chandaria had no moons and a heavy mist shrouded the face of the planet from the stars. Ten steps took Magnus Ridolph into utter darkness. He switched on his pocket flash, picked his way gingerly over the soggy ground, at last came upon the trail to the laboratory—a graveled path, dry and solid.

Once fairly on the path he doused the flash, halted, strained his ears for sound. He heard a far waver of voices from the direction of the cannery, a phonograph faintly squeaking Capellan music.

He continued along the path, guiding himself by the feel of the gravel, stopping often to listen. He walked an interminable time, through blackness so dense that it seemed to stream back from his face as he walked. Suddenly a row of lighted windows glowed through the fog. Magnus Ridolph moved as close as feasible to one of these windows, stood on his tiptoes, stared.

He was looking into a room equipped as a biological laboratory. Donnels and a slight dark man in a white smock stood talking beside a coffin-shaped crate.

As he watched Donnels took a pair of cutters, snapped the bands of metal tape binding the crate. The fiber sides fell away, wadding was torn aside, and now a factory-new diving-suit stood revealed—a semi-rigid shell with a transparent dome, oxygen generator and propulsion unit.

Donnels kicked aside the rubbish, stood viewing the gear with evident satisfaction. Magnus Ridolph strained to catch a word of the conversation. Impossible—the window was insul-glass. He trotted to the door, inched it open.

"—ought to be a good outfit, four hundred and fifty munits worth," came Donnels' flat voice.

"The question is—is it what we need?"

"Sure." Donnels sounded confident, cocksure. "There's no current to speak of. In five minutes I can circle the colony, and before they know what's going on, the stessonite will kill 'em off like flies."

"Ha, hmph," the technician coughed. "They'll see you coming—ha, hmph—just as when you tried to blast them."

"Curse it, Naile," crowed Donnels, "you're a pessimist! I'll come in along the bottom. They won't see the suit like they did the boat. The suit can hit as fast as they can swim; no chance of word getting on ahead. Well, we'll try anyway. No harm trying. How're your pupils coming along?"

"Good, very good indeed. Two in D tank are ready for the fifth chart and in H tank —that big fellow—he's into the eight chart."

MAGNUS RIDOLPH straightened slightly, then bent closer. "The Barnett Method?" He heard Donnels' voice. "And how about that fellow—in the tank by himself?"

"Ah," said Naile, "that's the wise one! Sometimes I think he knows more than I do."

"That's the boy that'll make millionaires out of both of us," said Donnels, a singing lilt in his voice. "Provided I can buy out Karamor."

There was a silence. Then Magnus Ridolph heard a faint movement of feet. He ducked back to the window, in time to see Donnels' broad-shouldered figure leaving the laboratory.

Naile came obliquely toward him, bent forward with mouth loosely open, staring at an object out of Magnus Ridolph's vision. Magnus Ridolph chewed his lip, fingered his beard. Hypotheses formed in his mind, only to be defeated by their eventual implications. Naile left the room through a door at the rear. Evidently he had his quarters in an annex to the laboratory.

Magnus Ridolph stirred himself. Further information must be collected. He marched to the door and, almost insolently casual, entered the laboratory.

Standard equipment—permobeam projector and viewer, radio-activator, microscopes —visual and quantumnal—balances, automatic dissectors, gene calibrators, mutation cradles. These he dismissed with a glance. At his shoulder stood the diving-suit. First things first, thought Magnus Ridolph. He inspected the suit with appreciation.

"Excellent apparatus," he said to himself. "Admirable design, conscientious workmanship. A shame to defeat the purpose of so much effort." He shrugged, reached inside,

and detached the head of the seam-sealer —a small precisely-machined bit of metal, without which the suit could not be made water-tight.

Movement flickered across the room. *Naile!* Magnus Ridolph quietly stepped toward the door. The motion caught the technician's eye.

"Hey!" he cried. "What are you up to?" He bounded forward. "Come back here!" But Magnus Ridolph was away into the Chandaria night.

A beam of light tore a milky rent through the fog, rested a moment on Magnus Ridolph.

"You!" roared Naile. For so slight a man, thought Magnus Ridolph, his voice was remarkably powerful. He heard the thud of Naile's feet. The man also appeared to be agile, swift.

Magnus Ridolph groaned once, then—as the thud of feet grew louder—he jumped off the path into the swamp.

He sank to his knees in cool slime, crouched, threw himself prone. The beam of Naile's flash passed over his head, the steps pounded past. Darkness returned.

Magnus Ridolph struggled through the muck back to the path, proceeded cautiously.

The mist wandered away, vague as a sleepwalker. Magnus Ridolph saw the lights of his bunkhouse, a hundred yards distant. But as he watched they were obscured by something prowling the road in front. Naile?

Magnus Ridolph turned, trotted as fast as his old legs would carry him, skirted far around to the left. Then he closed in to the rear of the bunkhouse. He made directly for the washroom, showered, rinsed out his clothes.

Returning to the recreation hall he found the stocky bald man sitting exactly where he had left him an hour previously.

Magnus Ridolph took a seat. "I understand," he said, "that Donnels was blasting out in the ocean."

The plump man guffawed. "Yes, sir, he surely was. What in the Lord's name for, I'm sure I can't tell you. Sometimes I think he's—well, he flies off the handle, like. A little excitable."

"Possibly he wished to kill some fish?" suggested Magnus Ridolph.

His friend shrugged, pushed plump lips out around his pipe-stem. "With hundreds of tons of fish swarming of their own free will into his cannery he wants to go out and kill more? I hardly think so. Unless he's crazier'n I think."

"Just where was he blasting?"

His friend darted him a glance from little blue pig-eyes. "Well, I'll tell you—though I don't see what difference it makes. He was right off the point of land that sticks into the ocean—the one with the three tall trees on it. About a mile down the shore."

"Strange," mused Magnus Ridolph. He pulled the small metal part from his pocket, fingering it thoughtfully. "Strange. Sardines flinging themselves headlong into cans—Donnels and Naile applying the Barnett Method to something in a tank—Donnels blasting, poisoning something in the ocean —and, too, the adulteration of the canned sardines. . . .

HE reported to work at the eviscerator with a theory looming vague at the portals of his mind, like one of the fern trees through the Chandaria mist. He bent over the chute, eyes under the frosty eyebrows sparking with as much excitement as he ever permitted himself.

Open the gate—the surge of fish. Close the gate. Open the gate—the chute running thick with glinting silver crescents. Close the gate. Open the gate—the fish, first one, then the ranks behind. Close the gate.

Magnus Ridolph noted that always a lone sardine led the way down the chute, a swarm of followers close on his tail. And peering after them into the bowels of the eviscerator Magnus Ridolph noticed an inconspicuous side-channel into which the first fish ducked while his fellows poured on to their deaths.

Magnus Ridolph thoughtfully found a rag, reached far down, wadded shut the side-channel. Open the gate. The lead fish plunged down the chute—after him came the blind finny horde. He reached the side-channel, butted the rag frantically. The thrust of the others caught him. With desperate flapping of tail, he vanished into the knives. Close the gate. Open the gate. And the lead fish, thwarted in his escape by the wadded rag, was carried to death by his fellows.

Six times the sequence was repeated. Then, when Magnus Ridolph opened the gate, there was no rush of fish. He reached down, removed the rag, sat peering with an innocent eye up the chute.

A foreman presently bustled forward. "What's the trouble? What's wrong up here?"

"The fish evidently have learned the danger of the chute," said Magnus Ridolph. The foreman gave him a scornful glance. "Keep working the gate." He turned away.

Ten minutes later, when Magnus Ridolph opened the gate, fish poured down the chute as before. The foreman came to watch a moment, assured himself that the fish were running as usual, then departed. Magnus Ridolph replaced the rag in the side-passage. Six operations later the opened gate again drew blank. Magnus Ridolph immediately pulled out the rag.

The foreman came on the run. Magnus Ridolph shook his head ruefully, framed an apologetic smile behind his beard.

"We can't have this—we can't *have* this!" bawled the foreman. "What's going on here?"

He ran off, came back with a rock-eyed Donnels.

Donnels peered down the chute, felt into the side escape. He drew back, straightened, glanced sharply at Magnus Ridolph, who blandly returned the gaze.

"Throw another unit into the tank," said Donnels to the foreman. "Keep an eye on 'em. See what's happening."

"Yes, sir." The foreman hurried off.

Donnels turned to Magnus Ridolph, his long yellow face set hard, his mouth pulled far down at the corners.

"You come out on the last ship?"

"Why, yes," said Magnus Ridolph. "A dismal voyage. The quarters were cramped, the food was miserable."

The thin mouth quivered. "Where did you sign up?"

"On Rhodope. I remember it perfectly, it was—"

"Fine, fine," said Donnels. After a short pause, "You look like a pretty smart man."

"Ahr, ahem," said Magnus Ridolph. "Are you suggesting a promotion? I'd be delighted to have a more responsible position, something clerical perhaps."

"If you're smart," said Donnels in an edged even tone, "you'll keep your mind on your work—and *nothing* else."

"Just as you say," said Magnus Ridolph with dignity.

The foreman returned. Donnels signaled Magnus Ridolph to raise the gate and fish once more flushed the chute.

Donnels stood close at hand for twenty minutes and the foreman remained ten minutes after Donnels had stalked away.

The rest of the shift Magnus Ridolph performed his duties well and skillfully—though by way of diversion he found it amusing to reach down and cuff the Judas fish as it passed, until at last the fish learned to keep to the far side of the chute. Magnus Ridolph could pursue his sport only with inconvenient exertion and so desisted.

MAGNUS RIDOLPH sat on the clammy bench before the bunkhouse, looking out over the landscape. There was little to see. Low in the sky hung the giant red sun, fitfully obscured by the shifting vapors. Ahead stretched the mud-flats and the leaden ocean, to his left rose the cannery and the warehouse. To his right the laboratory was visible, two hundred yards down the gravel path.

Magnus Ridolph reached for a cigar, then remembered that he had packed none in his meager luggage—and the brand sold at the commissary offended rather than soothed his palate.

Movement at the laboratory. Magnus Ridolph sat straighter on the bench. Donnels and Naile emerged, followed by two Capellan laborers, carrying the diving-suit.

Magnus Ridolph pursed his lips. Evidently the absence of the seam-sealer had not been discovered.

He watched impassively as the party turned toward the cannery wharf—Donnels darted him a long level stare as he strode by.

As soon as the group had passed Magnus Ridolph rose, jauntily set off down the path toward the laboratory. He found the door unlocked and, entering, turned directly to the wall which had been out of his vision when he stood at the window.

Tanks lined the wall, tanks full of fish—sardines. Some swam placidly to and fro, others hung close to the glass, staring out with intent eyes. Magnus Ridolph became aware of differences.

Some had monstrous tails, lizard-like heads. Others resembled tadpoles, with rudimentary fins and tail barely moving hyper-developed crania. Eyes bulged at Magnus Ridolph—eyes like bubbles, eyes flame red, eyes coal-pit black. One fish trailed a bridal-train of fins, another wore an antler-like head-growth.

Magnus Ridolph surveyed the array without emotion. He had seen like sights in other biological laboratories, freak distortions of every description. In the infamous clinic on the planet Pandora— Magnus Ridolph returned to the case at hand, sought a fish in a tank by himself—"the wise one."

There he was, at the far end—a fish normal except for a slightly enlarged head.

"Well, well," said Magnus Ridolph. "Well, well." He bent forward, peered into the tank and the sardine, eyes unwinking, expressionless, stared back. Magnus Ridolph turned, sought around the room. There—the twenty charts comprising the Barnett Method for Establishing Communication with Alien Intelligences.

Magnus Ridolph fanned out the master chart before the tank, and the fish pressed closer to the glass.

"Opening communication." Magnus Ridolph signaled and waited. The fish plunged to the bottom of the tank, returned with a bit of metal in its mouth. It tapped on the glass—once, twice, once.

Magnus Ridolph had no need to refer to the chart. "Proceed," was the message.

He bent over the chart, selected the symbols with care, pausing frequently to assure himself that the fish was following him.

"Instructor-man . . . of you . . . desire . . . utilize . . . you . . . purpose . . . injury . . . class of you. I . . . know (negative) . . . method."

The fish tapped on the glass: 5 — 3 — 5, 4 — 3 — 2. 5 — 6 — 1, 2 — 6 —3 — 4.

Magnus Ridolph followed the code on the chart. "Class of me . . . exists . . . place (indefinite, interrogative)?"

Magnus Ridolph signaled back. "Large (emphatic) . . . extension . . . water . . . exists . . . exterior. Plurality (emphatic) . . . class of you . . . exists Class of instructor-man . . . kill . . . class of you . . . eat . . . class of you."

"Purpose (interrogative) . . . of you?" was the fish's pointed signal.

"Complex mixture," signaled Magnus Ridolph. "Constructive. You . . . desire (interrogative) . . . depart . . tank . . . converge . . . plurality . . . class of you?"

The fish rattled his bit of metal indecisively. "Food?"

"Plurality," returned Magnus Ridolph. "Swim . . . extension (emphatic) . . . barriers (negative)."

The fish twitched his fins, retired to a dark corner. Presently, as Magnus Ridolph was becoming restive, the fish swam out in front once more, tapped twice on the glass.

Magnus Ridolph sought around the laboratory, found a bucket. He dipped it into the tank, but the fish nervously skittered out of reach. Magnus Ridolph scooped him out willy-nilly and, stuffing the Barnett charts into his pocket, he left the laboratory.

BRISKLY he traversed the path, turned toward the wharf. Now he spied Donnels and Naile coming toward him, lines dividing Donnels' yellow face into hard segments. Magnus Ridolph prudently set the bucket beside the bunkhouse, and was placidly seated on the bench when Donnels and Naile passed.

"—slider was there and working last night, I'm sure," Magnus Ridolph heard Naile say. Donnels shook his head curtly.

As soon as they had passed Magnus Ridolph took the bucket, continued toward the wharf.

The diving-suit stood at the edge of the pier, ready for use—except for the missing seam-sealer. The Capellan laborers stood dully nearby, watching without interest.

Magnus Ridolph rubbed his chin. Suit—seam-sealer—why not? He changed his mind about throwing the fish into the ocean; instead he approached the suit, looked it over carefully. Two dials on the breastplate; one controlled the drive-unit, the other the air generator. Simplicity itself.

He fitted the seam-sealer into place and, with a side-glance at the two Capellans, stepped into the suit, slid the seam-sealer home. The Capellans shifted uneasily, brains roiling at a sight which they knew to be unnatural—and yet which they had no orders to prevent. As an afterthought Magnus Ridolph unsealed the suit, transferred the Barnett charts to the exterior pouch, sealed himself into the suit once more.

At his belt hung a knife, an axe, a flashlamp. Another lamp was set at the top of the transparent head-dome. He reached to the breastplate, assured himself that the dials moved easily, set the air-generator in operation.

He looked over his shoulder. Motion near the laboratory. He floated the bucket on the sluggish water, lurched off the dock. A last glimpse of the rear showed him George Donnels running in his direction, face twisted in a contortion of rage. Behind him scampered

Naile, white smock flapping.

Magnus Ridolph tapped the side of the bucket, unsure of the code, hoping for the best. "Swim . . . proximity . . . me." Then he overturned the bucket. The fish darted out, away. Magnus Ridolph himself sank under the surface

He twisted the propulsion dial. Water was sucked into the unit, spewed astern. Magnus Ridolph drove headlong through the water. And something tore hissing past the head-dome, made a vague clap in his ears.

Magnus Ridolph wrenched at the dial, and the water buffeted his suit.

Two or three minutes later he slowed, rose to the surface. The wharf was a quarter-mile to the rear and he could see Donnels' taut frame searching across the water. Magnus Ridolph chuckled.

The point of land with the three tall trees sloped into the ocean at his left. Turning on his head-lamp, fixing the direction by a compass set in the rim of the dome, he submerged, drove forward.

The water was emerald-green, clearer than it semed from the surface. He swam into a gigantic underwater forest—sea-trees with delicate silver fronds pinned to the bottom by the slenderest of stalks, sea-vines rising straight as pencils of light from the depths, with shining globes spaced along the stalks.

These might not be true plants, thought Magnus Ridolph, but possibly groups of polyps like the anemones of Earth. And, recalling the sting of the Portuguese man-of-war, he gave the sea-vines a wide berth.

Everywhere swam sardines, shoal upon shoal, sardines by the millions, and the light in the head-dome glinted on the flitting silver sides like moonlight along a wind-ruffled lake.

Magnus Ridolph looked about to see if possibly the fish he had liberated were near. If so he was indistinguishable among his fellows.

On he drove, suspended between the mirroring under-surface and the gloom of the depths, past shoulders of quiet mud, across sudden deeps, threading the groves of the sea-trees.

He rose once more to the surface, adjusted his course. The cannery was a ramshackle huddle far back along the gray shore. He submerged, continued.

A WHITE wall glimmered ahead. He veered, slowed and saw the barrier to be a submarine dyke, a rampart of felsite or quartzite, striding mightily across the ocean floor. He drifted close to the wall, rose to the top face—a flat course of rock fifteen feet below the surface.

Magnus Ridolph floated quietly, considering. This was approximately where Donnels had blasted, possibly a little further out to sea. He turned, swam slowly through the lime-green water, just above the flat white rock-face. He halted, floated motionless.

Below him several-score bubbles clung to the stone, large globes arrayed in ordered rows. They seemed flexible, swayed slightly to random currents. Within, Magnus Ridolph glimpsed small intricate objects and a lurid flickering light came from several.

Magnus Ridolph suddenly became aware of the press of fish, thicker than anything he had seen to date. They were pushing slowly in upon him and now, noting the hyper-developed crania, the bulging eyes, the careful purposive movements, Magnus Ridolph felt that he knew a great deal about the Chandaria cannery.

He also experienced a sense of uneasiness. Why were several of the fish nudging a weighted bubble in his direction?

He whipped out the Barnett charts, found number one, gesticulated to the sequence which conveyed the notion of friendly intent.

Several of the fish darted close, followed his motions carefully. One of them—no different, so far as Magnus Ridolph could tell, from the multitude—came clase, tapped on head-dome.

1 — 2 — 1 — "opening communication."

Magnus Ridolph sighed, relaxed in the diving suit, indicated symbols on the charts.

"I . . . come . . . purpose . . . help . . . class of you."

"Doubt. Class of you . . . destructive (interrogative)?"

"Class of me . . . in building . . . friends (negative) of me. I . . . constructive. Friend . . . class of you."

"Class of you . . . purpose . . . kill . . . class of us."

Magnus Ridolph struggled with the elemental concepts. Valuable as the charts were, conveying an exact sense was like repairing a watch with a pipe-wrench.

"Complex . . . thought. Class of me . . . carry . . . you . . . this place. Construct . . . thinking . . . of you . . . stronger."

A sudden small movement flurried through the throng, silver sides twinkled.

Magnus Ridolph listened—the hum of a propeller. He rose to the surface. Not a hundred yards distant was the rowboat, propelled by an outboard motor. The man in the boat sighted Magnus Ridolph, swerved. In one hand he carried a long tube with a shoulder stock. Magnus Ridolph submerged quickly.

The propeller droned louder, closer. The black underbody of the little boat plunged directly at him.

Magnus Ridolph threw the propulsion dial hard to its stop. Water blasted back from the jet, scattering the fish, and Magnus Ridolph dove off at an angle.

The boat turned with him, following swiftly. The propeller halted, the boat slowed. Under the surface came the tube, pointing at Magnus Ridolph. It twitched, ejected a little projectile which bubbled fast toward him.

Magnus Ridolph doubled fast to the side and the spew of his drive caught the missile, diverted it slightly. From behind came a tremendous explosion—jarring Magnus Ridolph like a hammer blow. And the boat was once more after him.

Magnus Ridolph blinked, shook his head. He twisted, dove up at a slant for the boat. Up under the light boat he came, the head-dome under one side of the hull. Full power on the thrust-unit—up and over went the boat. Sprawling into the water toppled an awkward dark shape and the rocket-tube plunged steeply into the darkness below. The boat filled with water, settled into the gloom.

Magnus Ridolph surfaced, placidly watched Naile, the laboratory technician, paddling for land. He was a clumsy swimmer and the shore was a mile distant. If he reached the shore, there would still be several miles of morass to traverse back to the cannery. After a moment Magnus Ridolph sunk below the surface, returned to the great white underwater rampart.

JOEL Karamor strode back and forth, hands behind his back, forehead furrowed. Magnus Ridolph, at his ease in an old-fashioned leather armchair, sipped a glass of sherry. This was Joel Karamor's business office, high in the French Pavilion Tower—one of the landmarks of Tran, the miracle-city on the shores of Lake Sahara.

"Yes," muttered Karamor, "but where was Donnels all this time? Where is he now?"

Magnus Ridolph coughed slightly, touched his white beard, this once more crisp, well-cropped.

"Ah, Donnels," he mused. "Did you value him as a partner?"

Karamor froze stock-still, stared at his visitor. "What do you mean? Where is Donnels?"

Magnus Ridolph touched the tips of his fingers together. "I'll continue my report. I returned to the dock and as it was somewhat after sunset, very dull and gloomy, I fancy I was not observed. A large number of the intelligent fish, I may add, accompanied me for reasons of their own, into which I did not inquire.

"I assumed that Donnels would be standing on the wharf, probably armed and emotionally keyed to shoot without permitting me to present my authority from you. I believe I have mentioned that the wharf provided the only access from the cannery to the ocean—the shore being an impassable swamp.

"If Donnels were standing on the wharf, he would completely dominate the ground. My problem then was to find a means to reach solid ground without being perceived by Donnels."

Karamor resumed his pacing. "Yes," he muttered. "Go on."

Magnus Ridolph sipped his sherry. "A suitable expedient had occurred to me. Understand now, Joel, I could not, at the risk of my life, climb boldly up on the wharf."

"I understand perfectly. What did you do?"

"I swam through the trap into the concentration pond. But I still would be exposed if I tried to emerge from the water, so . . ."

"So?"

"So I swam to the gate into the cannery, waited till it opened and propelled myself into the chute toward the eviscerator."

"Hah!" snorted Joel Karamor. "Just the grace of God I'm not opening a can of sardines and finding you. Canned Magnus. Canned Ridolph!"

"No," said the white-bearded sage. "There was little danger of the eviscerator. The chute is set at a gentle slope . . . As you may imagine, the operator of the machine was startled when I appeared before him. Fortunately for me he was a Capellan, excellent at routine tasks, short on initiative, and he raised no special outcry when I rose from the chute.

"I removed the diving suit, explained to the Capellan that I was testing the slope of the channel—which seemed to satisfy him—and then I strolled out on the wharf.

"As I expected, Donnels was standing there, watching across the water. He did not hear me—I walk rather quietly. It now occurred to me that inasmuch as Donnels was young and athletic, of choleric disposition and furthermore carried a hand-weapon, my bargaining position was rather poor. Accordingly I pushed him into the water."

"You did! Then what?"

Magnus Ridolph put on a doleful countenance.

"Then what, confound it?" bawled Karamor.

"A tragic occurrence," said Magnus Ridolph. He shook his head. "I might have foreseen it had I thought. You remember, I mentioned the fish following me back from the dike."

Karamor stared. "You mean?"

"Donnels drowned," said Magnus Ridolph. "The fish drowned him. Feeble individually, in the mass they drove him away from the wharf, pulled him under. A distressing sight. I was very upset."

Karamor paced once, twice, across the room, flung himself into a chair opposite Magnus Ridolph.

"An accident, hey? Poor unfortunate Donnels, hey? Is that the story? The trouble is, Magnus, I know you too well. The whole thing sounds too precise. These—ah, intelligent sardines"—he made a sardonic mouth—"had no idea Donnels would be pushed into the water?"

"Well," said Magnus Ridolph thoughtfully. "I *did* mention that he would probably be waiting on the wharf. And the Barnett charts, though very useful of course, are not infallible. I suppose it's not impossible that the fish assumed—"

"Never mind, never mind," said Karamor wearily.

"Look at it this way," suggested Magnus Ridolph easily. "If Donnels had not attempted to blast and poison the fish they would not have drowned him. If Donnels had not sent Naile to blast me out of the water and had not been waiting on the dock for the honor of shooting me personally I would not have pushed him in."

"Yes," said Karamor, "and if you hadn't stolen his suit he probably wouldn't have been waiting for you."

Magnus Ridolph pursed his lips. "If we pursue the matter of ultimate responsibility to the limit we might arrive at you, who, as Donnels partner, is legally responsible for his actions."

KARAMOR sighed. "How did the whole thing start?"

"A natural evolution," said Magnus Ridolph. "Donnels and Naile, in stocking Chandaria with sardines, naturally selected the best sardines possible. Then in the laboratory, while waiting for the fish to multiply, they encouraged mutations to improve the stock even further.

"One of these mutations proved highly intelligent, and I fancy this gave Daniels his big idea. Why not breed a strain of intelligent fish which could be trained to work for him, like sheep-dogs or better, like the Judas-goat which leads the sheep into the abbatoir?

"They set to work breeding, cross-breeding, and indeed a very intelligent sardine resulted. Those which would cooperate with Donnels rendered very valuable service, enabling him to can fish without going to the trouble of catching them himself.

"A few of the fish, the most intelligent, preferred freedom and founded a colony near the dike. Donnels soon learned of this colony because all but the most servile of his Judas fish swam off and joined their brothers.

"Taming these fish, teaching them, was a laborious task and Donnels decided to exterminate the colony. He also feared that the intelligent fish might outnumber the normal ones and refuse to be led blindly into his concentration pond. He tried blasting and poison from the surface but was unsuccessful, as the fish could see him coming. So he ordered a diving-suit from Rhodope.

"Meanwhile the fish had launched a counter-offensive. They had no weapons—they could not attack Daniels directly. But they knew the purpose of the cannery, that it packed sardines for human consumption.

"They developed the skill to build the bubbles on the dike—a secretion, I believe—and prepare a series of offensive substances. Then a great number of ordinary sardines were captured, packed with these substances, sent into the cannery to be canned and exported."

Joel Karamor rose abruptly to his feet, once more paced the glossy floor. "And what happened to Naile?"

"He showed up a day later. A mere tool."

Karamor shook his head. "I suppose the plant is a total loss. Did you make arrangements to evacuate the help?"

Magnus Ridolph widened his eyes in surprise. "None whatever. Was I supposed to do so?"

"I gave you full powers," snapped Karamor. "You should have seen to it."

A buzzer sounded. Karamor pushed the button. A soft voice spoke. Karamor's brindle-gray hair rose in a startled ruff.

"Cargo of canned sardines? Hold on." He turned to Magnus Ridolph. "Who dispatched the sardines? What's going on here—and there?"

Magnus Ridolph shrugged. "The cannery is functioning as before—under new management. Using my powers I made the necessary arrangements. Your share of the profits shall be as before."

Karamor halted in mid-stride. "So? And who is my partner? Naile?"

"By no means," said Magnus Ridolph. "He has nothing to offer."

"Who then?" bellowed Karamor.

"Naturally, the colony of intelligent sardines I told you about."

"What!"

"Yes," said Magnus Ridolph. "You are now associated commercially with a shoal of sardines. The Sardine-Karamor Company."

"My word," husked Karamor. *"My word!"*

"The advantages to all concerned are obvious," said Magnus Ridolph. "You are assured of efficient management with high-grade raw material guaranteed. The sardines receive whatever civilized amenities they desire."

Karamor was silent for some minutes. He turned a narrow eye on the bland Magnus Ridolph.

"I detect the Ridolph touch in this scheme. The characteristic lack of principle, the calculated outing of orthodox practise . . ."

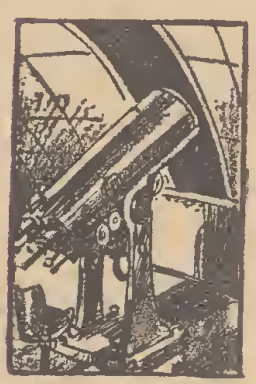
"Tut, tut," said Magnus Ridolph. "Not at all, not at all."

Karamor snorted. "Do you deny that the whole program was your idea?"

"Well," said Magnus Ridolph carefully, "I admit that I pointed out to the fishes the advantages of the arrangement."

*

New Methods of "Reading" the Stars



THE effect of recent scientific developments upon astronomy may well presage a completely new and adult development for the oldest of all the sciences. Apart from the new 200-inch telescope on Mount Palomar, which has already expanded by eight times the astronomical universe, new techniques and devices are increasing our knowledge of other stars and planets almost daily.

However, beginning with the wide-angled and non-cumbersome Schmidt type photographic telescopes, there are several entirely new methods of determining the nature of the universe about us.

Among them are the Coronagraphs, which enable astronomers to study the sun under eclipse conditions at any time it is above the horizon and not shrouded by clouds—light-sensitive cells able to note and record variations in light far more accurately than the human eye, as well as to see the invisible heatlight of stars and planets recordable by older methods—the new field of radioastronomy, which by means of high-frequency rays such as radar enables astronomers to gain increased knowledge of Earth's upper atmosphere and the relatively closer objects in space.

As still newer methods develop in these already established and other fields of astronomical investigation, we can expect to make revolutionary new discoveries as to what is really happening in the universe.

Not only will man benefit on his own home planet by this wider knowledge but it will provide the data upon which the ever closer approaching space flights will be based.

—*Carter Sprague*

MARTIAN

A Hall of Fame Novelet by

ALEXANDER

The Shentolian raised his metal tube and the silence was sundered by rifle fire

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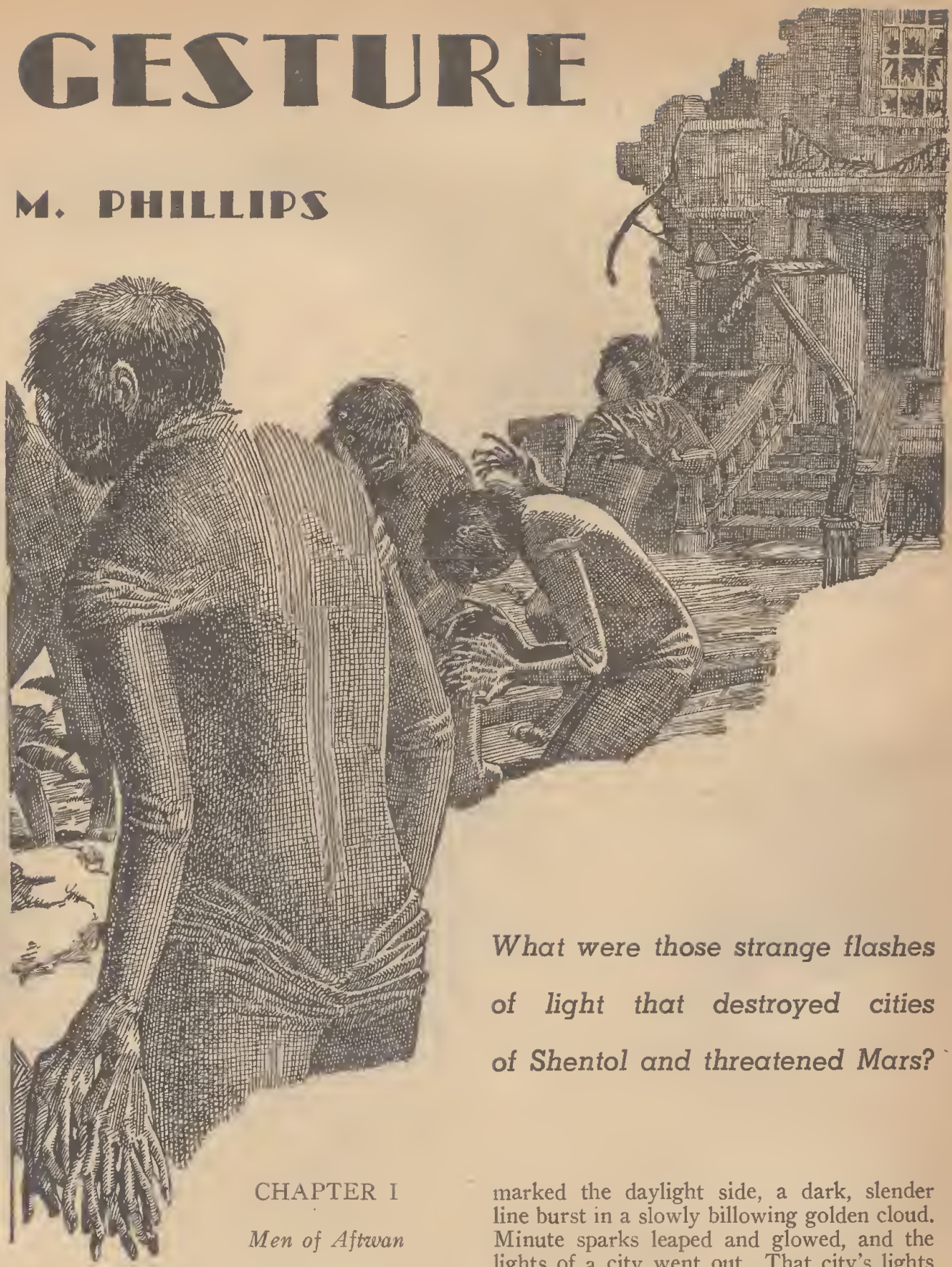
GESTURE

M. PHILLIPS



What were those strange flashes of light that destroyed cities of Shentol and threatened Mars?

CHAPTER I

Men of Aftwan

AGAIN came that swift flash of colored light across the face of the planet. The shadowed side was still for a time, then from the thin crescent which marked the daylight side, a dark, slender line burst in a slowly billowing golden cloud. Minute sparks leaped and glowed, and the lights of a city went out. That city's lights had been burning for five hundred years.

Swift, stabbing flashes, a brighter one, then smoke or cloud surging up to the limits of the atmosphere. Another age-old city's

lights winked and were gone.

The giant telescope picked up a slight vibration in the thin Martian air and the image of the planet flickered, swam wildly for a moment, then steadied again. Vraughn ic Dalfca Sconnefecot, chief astronomer of the Planetary Observatory, peering into his telescope at the bewildering and mysterious behavior of this neighboring world, twitched with impatient excitement.

For six months the planet had been behaving in this unnatural manner and had aroused the intense interest of the Martian observer. He had first noticed disturbances of a similar sort as Mars' next inner neighbor was approaching superior conjunction. Then, as it neared the sun and passed behind it, observation became impossible and ic Dalfca waited impatiently, convinced that the phenomena would have ceased before the third planet of the Sun's family was again visible. He was not a little surprised, as the planet approached its greatest elongation, affording a better and better view of its night side, to discover that its strange activity had not ceased, but had spread even more widely.

The Martian gazed speculatively at the bright, rather greenish star that hung with such deceptive calm in the clear, star-sparkling Martian sky. For five hundred years the astronomers of the Planetary Observatory had nightly watched the lights of cities on the inner planet and never had they seen any such exhibition as was now transpiring. For more than five hundred years they had known that life existed on the other planet, but it was not until the light-condensing and amplifying telescope had been developed that they had finally seen the lights of cities.

Now something of tremendous import to those cities was extinguishing their lights. Ic Dalfca was not a little frightened. Suppose some dread disease of planets was attacking that greenly glowing sphere. Would Mars be next? Would those leaping sparks, those vicious flashes of light attack Mars next, to destroy her age-old cities and leave a dead and darkened globe to circle the sun?

THE Martian astronomer knew that the sparks and flashes were not volcanic. Volcanoes did not leap across continents to burst again into short-lived, flaming life. Meteors would have flamed as they struck the atmosphere. These flashes came from the surface.

Ic Dalfca leaned again over the telescope. The green star vanished and reappeared as a crescent moon. But in the night-shadowed hemisphere the bursting lights still flickered and danced as they had done for the past half-year. The observer swung the spectroscope into place, preparatory to photographing the planet once more. The radio-vision signal buzzed and a tiny light glowed in one corner of the darkened observatory.

Ic Dalfca made his way in the darkness past the huge, delicately poised telescope and switched on the radio-vision plate. A dim light cast a vague, weird illumination upon the instruments. For a few seconds the vision-plate remained blurred, then it focused and the face of another Martian gazed out at Ic Dalfca.

The species upon Mars which had fought the long, bitter, uphill fight of evolutionary progress, to stand at last on the lonely heights of intelligence, resembled a human being only superficially. The Martian "man" was about eight feet in height. He had no huge, bulging chest, no wide, flaring ears or thin, pipe-like limbs. His body was heavy and solid and bore four limbs The species had risen upon the hinder pair of limbs, releasing the front pair for purposes other than locomotion. This permitted the development of hands, capable of conveying to the dawning mind facts and sensory impressions which paws could never do.

The Martian fore-limbs had evolved far from anything resembling paws. In the place of hands were long, fragile, intricate digits, each "wrist" supporting a score or more of such fingers of varying lengths and shapes. The dexterity with which ic Dalfca controlled his clusters of fingers revealed the complexity of the motor centers of his brain.

The head of the Martian "man" had long ago lost all suggestion of animal ancestry; it was round and heavily furred, the long, thick fur concealing almost completely the tiny side-closing, double pairs of jaws. Two large eyes, guarded by a tough, transparent, chitinlike substance, were beneath the swelling brow and a third insectlike, compound eye, smaller than the other two gleamed like a tiny jewel in the forehead. The sturdy lower limbs were jointed twice and terminated in a compact, fused pad wherein could be traced the larger and stronger digits of the hand, here united for nearly their entire length.

The body was narrow near the joint cor-

responding to the hip and widened slightly as it approached the shoulders, but a certain rigidity concealed organs and muscles entirely. This was accounted for by the fact that the skin of the Martian was of a hard, shell-like tissue, reddish, with but slight elasticity. At the joints it was convoluted somewhat in the manner of a bellows.

On a planet so remote from the Sun, resistance to cold was a necessity, and the species best suited to endure extreme cold was most likely to survive. So the skin of the Martian was almost perfectly thermostatic. Body heat was radiated slowly. Oxidation was far less rapid, little oxygen being necessary to support life, thus admirably fitting the creature for survival in the thin, frigid atmosphere of Mars.

So ic Dalfca did somewhat resemble a gigantic man, but a nearer approach would have frightened a Terrestrial visitor into believing himself in the presence of a Chinese devil. Actually the Martian was not hideous —merely different, fantastic.

He apparently knew the other, whose image showed in the vision-plate, for ic Dalfca spoke familiarly. His speech was an intricate series of faint clicks and clear, bell-like sounds.

"You are at your telescope late tonight, Varb," said ic Dalfca, with genial mockery in his voice. "I did not think you preceptors were so diligent."

THE other astronomer clicked his jaws rapidly in mock irritation. He was Varb il Thistacan, an instructor at the ancient teaching-centre at Bab-vir-Gratvon, one of Mars' oldest cities, about one hundred miles south of the Planetary Observatory, where ic Dalfca, holding the governmental office of chief astronomer, was stationed.

"What has had your attention tonight?" asked ic Dalfca. "The group of binaries that you and that southern observatory have been concentrating on recently?"

"No." Il Thistacan became serious. "As you know, Bab-vir-Gratvon is working on the course to be followed by the space-ship which the Interplanetary Society is launching. I have been computing the orbits of the asteroids they are most likely to meet in crossing the asteroid belt. Remembering your assertion that Shentol, the third planet, which is behaving so strangely, is for that reason more worthy a visit than Chavroe, all night have I watched your green enigma and I am definitely opposed to making it the destination of our space-ship. What unpredictable dangers may await us is worthy of serious consideration, and Shentol is evidently in violent agitation."

"No danger is unpredictable," interrupted ic Dalfca. "We can determine gravity, mean temperature, and the nature and density of the atmosphere. Our explorers will land upon the planet fully prepared for any physical difficulties they may meet."

"What, then, is occurring upon Shentol," demanded Varb il Thistacan, "which is of such serious nature as to destroy entire cities? What are the flashes of light upon her surface? And what is happening to Shentol's atmosphere?"

Ic Dalfca tapped impatiently upon the studded control board.

"That," he insisted, "is what we must know. Have you thought that Aftwan, our own planet, may be next? Possibly some magnetic disturbance is responsible, induced by the tremendously potent field of the sun. A visit to Shentol might enlighten us so that we would be prepared in the event of a like disturbance here. It would not be necessary for the interplanetary travelers to land upon Shentol."

"True." The small image of il Thistacan looked more cheerfully from the vision-plate. "But whatever knowledge they might bring back would be of only academic importance. We could do nothing to avert or control a catastrophe of such magnitude."

Ic Dalfca laughed. To human ears it would have sounded like the whirring of

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minute machinery.

"Varb," he said, "you are timid. You may speak for Chavroe, if you wish, but at the meeting of the Interplanetary League, in three days, I shall do all in my power to make Shentol our destination."

"But they would not have time enough to plot the course to Shentol," objected il Thistacan. "Soon it will be receding and the voyage would have to be postponed until it had again revolved about the sun and returned."

"All that would be necessary is the checking of the computations," replied ic Dalfca.

The little image in the vision plate flicked its hand before its face in the customary Martian, or Aftwanian, salutation; then the plate blurred and became dark. Ic Dalfca returned to the spectroscope and the photographic plate behind it.

Presently he withdrew the plate, and, switching on a light above the observer's seat, stared at the spectrum thoughtfully.

"Strange," he murmured. " Compounds of several elements not native to the amosphere are certainly being released."

The light seemed tiny in the huge observatory. Darkness encircled it and seemed to press in upon it. The cold was bone-cracking, but ic Dalfca was unaware of it. Some flying thing, which had wandered in, blundered about the vast dome in melancholy confusion.

The fluttering of the flying creature aroused ic Dalfca from thought and he extinguished the light and left the observatory. Outside, the level, monotonous landscape of Mars extended to the dark line of the horizon. Above arched the luminous, blue-black sky, brilliant with stars whose light pierced the cold, thin air with unearthly intensity.

PHOBOS, the inner moon of Mars, was climbing the westerly sky, and its scarred but brilliant face shed a pale illumination upon its parent body, revealing the miles of nodding, reddish grass which carpeted the flat, Martian plain. No sign of path or roadway was visible, nor did a building other than the observatory break the level surface. Mars was old, as were her people, and her water and air had eroded her mountains until but a few low, rolling hills remained to mark a forgotten youth. And now her air and water, their work done, were following the mountains into the all-engulfing sea of the past. Soon the planet would attain the perfect, unchanging stillness of an airless, waterless waste where nothing ever moved but the sharp, black, crawling shadows.

The inner moon did little to obscure the light of the thickly clustered stars; on Earth a light of such brilliance in the sky would have blotted out half of them. Nor did it hide the glow of Bab-vir-Gratvon which, a hundred miles to the south, sent an arching fan of light above the horizon—a signal in that vast emptiness that there dwelt Life.

Ic Dalfca walked across the broad esplanade, and, leaning on the strangely carven parapet, stared into the southern sky. High above the glow of Bab-vir-Gratvon a brilliant green star blazed steadily, and it was at this that ic Dalfca gazed. A huge, wingless air-liner, lights ablaze, swept silently down upon him, following a straight, invisible line that finally carried it into the glow of the southern city, but ic Dalfca seemed unaware of it. And so the dawn found him when it burst, unheralded by any refractive glow, in the eastern sky.

He surveyed the bright and sunny landscape, sparkling redly in the morning sunlight, then returned to the observatory, and his living quarters.

CHAPTER II

The Interplanetary League

ON a morning three days later, the Martian astronomer ran his small air-car from the base of the huge observatory. His assistant, a young student from the school at Bab-vir-Gratvon, and the small staff of servants and mechanics which the civil authorities had assigned to the Planetary Observatory watched as the air-car took off, to strike a course to the west, until it was nothing but a silvery, sun-reflecting spark high in the deep blue sky.

Three hours later ic Dalfca, having traversed nine hundred miles of unbroken, lifeless plain, discerned upon the quiet sky line, level as an ocean horizon, the first faint hint of color other than the unvarying red of the plains-grass. First came a shadowy green that became a wide band under him, mingling with the reddish grass. It widened swiftly, replacing the plains grass until a new, verdant vegetation filled the landscape.

And then one of Mars' rarest elements appeared. Water. A glistening pool flashed beneath ic Dalfca's air-car and the Martian peered down through the clear, transparent, glass-like metal that formed the prow of his craft, for the sight of water not in pipes or containers was fascinating.

More and more of such pools appeared, sparkling in the sunlight, and the ground revealed itself as a vast swamp. The vegetation became denser, and presently the air-car swept across a broad channel of frigid waters from the melting polar ice cap.

Ic Delfca flung open a window, admitting a thin, icy breeze. In the brilliant sun the air-car was getting uncomfortably warm even for the insensitive Martian.

Ahead suddenly, on the horizon, stood Thuron, brilliant, sun-sparkling, muti-colored, its towers rising in airy beauty against the pure blue of the sky.

News that he brought some startling proposal to the Interplanatory League meeting had arrived before him for, as ic Dalfca climbed from his air-car on the landing roof of the League's headquarters, he was met by a chattering group of news disseminator operators, eager for information. He pushed his way through, refusing to explain what had brought him to the meeting.

Varb il Thistacan was standing near the lift which communicated with the Hall of Debate on the ground floor. Ic Dalfca hurried to him. Officials of the Interplanetary League were also awaiting him, and good-naturedly surrounded him until they had gained the meeting hall.

As they entered the famous doorway made of the first ore brought back from the inner moon—a white, lustrous metal, majestically ornamented with a symbolic grouping by the Martian sculptor, Zher Gwatver—ic Dalfca thrust a flat case into il Thistacan's hands.

"The computed course to Shentol," he murmured. "It may be best that you have it now."

The Hall of Debate was a huge room—actually three rooms, for two ante-chambers, lofty, vaulted naves, preceded it, although they were separated from the main Hall by soaring, airy columns.

The Hall was circular and domed, the central vault sweeping upward until reason urged that it must fall in upon itself. Opposite the entrance, a speakers' rostrum, inset in the wall, occupied a quarter of the circumference, and members of the Interplanetary League thronged the serried rows of seats.

As ic Dalfca passed down the long aisle between slender, graceful columns of the white metal, he was met by a battery of interested, questioning eyes. Jarl vo Spuritwan, the president or chairman of the League, greeted him as he mounted the rostrum, and conducted the astronomer to the forefront of the platform.

Ic Dalfca looked out over the attentive members of the League. He was well-known to all of them. He had done important work in the development of their space-vessel; he was one of Mars' foremost astronomers. He depended largely on his prestige to sway their decision to the course he favored, for ic Delfca was well aware of the awe which the dangers facing these planetary navigators inspired. Take chances they would, but to court unknown and fearful doom was another matter. The astronomer must make his argument impressive.

WITH but the briefest of introductions, he began speaking. He outlined the history of the Interplanetary League and pictured the tremendous possibilities in the successful navigation of space. He mentioned difficulties which had been met and eventually overcome, and praised the courage of those who were about to put the results of their efforts to this most serious test.

The visit to the inner moon ic Dalfca pointed out as a proof of the practicability of space navigation while admitting the vastly greater dangers of an interplanetary flight. He described how Chavroe, the largest planet of the Sun's family, had been selected as the destination of the space-ship, and broached the purpose of his own visit to the meeting, describing his months of observation of the inner planet, Shentol, the eccentric disturbances upon its surface, its gradual disappearance as it passed behind the Sun, and his impatient awaiting its reappearance.

He showed photographs of the planet on a large screen; a running fire of comment swept through the audience as the unexplainable flashes of light sparkled across the dark side of Shentol. Ic Dalfca emphasized that they were found nowhere else in the Universe.

"What these lights portend," concluded ic Dalfca, "to either Shentol, our neighbor-

ing planet, or to Aftwan, our home, should they appear here, we cannot say. No instruments in our possession are powerful enough to reveal the source or nature of these flashes, although their devastating character can be guessed, as we see city after city winking into oblivion as the flashes encompass them. That the very atmosphere of this neighboring world is undergoing some stupendous alteration is apparent.

"To my mind, the doom that is overtaking Shentol is of the gravest importance not only to the inhabitants of that world, but to ourselves, for Shentol and Aftwan are subject to the same laws, guided by the same Sun, and the present affliction of one may become the fate of the other. For these reasons, you of Aftwan, I say Shentol should be our destination in the forthcoming attempt to bridge space to a neighboring world."

Ic Dalfca bowed serenely and quietly sat down beside il Thistacan.

"You had better go now," he murmured in the surprised scientist's ear, "and take with you the computations of the course to Shentol."

Il Thistacan looked at him amazed, but got up and went out.

Jarl vo Spuritwan had risen at the close of the astronomer's address, asked the attention of the audience, and began speaking.

"You are exciting yourselves unnecessarily," he said. "The danger of attempting to land upon this disturbed planet would be great, and would suffice, I think, to deter us from attempting the flight, but another and even more decisive factor makes it impossible. Shentol has passed opposition and each day carries it further away from us. Shortly it will be beyond our limits of travel. The time is far too short to permit the computing of the course our projectile would take in reaching Shentol, and we would be forced to wait until the planet was again approaching opposition.

"I feel confident that the League does not care to postpone the flight in order to await a favorable time for attempting a flight to Shentol. A later flight might be made to this planet, when the phenomena now apparent have moderated and our astronauts are more familiar with the nature of space navigation."

Ic Dalfca rose. "I have already computed the course to Shentol," he announced, "taking every possible factor into consideration."

This threw the meeting into a fresh excitement and the high dome of the Hall echoed to the strange buzzing and whirring speech of the Martians. Several rose, but could not be heard in the general din.

Jarl vo Spuritwan began calling for order, and the noise subsided.

"I see no point to any further discussion," he said, with irritation. "We have agreed that Chavroe shall be the planet visited; it is the largest of the planets, its intricate system of nine moons is of great astronomical interest, and the mystery of its cloud-enshrouded surface has long called for solution. Shentol is possibly on the point of disruption as a planet, and the danger of even approaching it closely is incalculable. I feel that I am speaking for the League when I say that we do not wish to expose our courageous astronauts to such unpredictable hazards."

LOUD cries of "Shentol! Shentol!" broke in upon him, and vo Spuritwan ceased speaking.

"Let us visit Shentol!" came from the rear of the Hall, and a proposed member of the rocket-ship was seen standing.

Ic Dalfca sprang to the edge of the platform and raised his hand.

"I would like to assure you," he said, "that disruption does not threaten Shentol! The mystery of her flashing lights has some other explanation. Dangerous, possibly, but I think we should seek that explanation, for the welfare of Aftwan."

Another member of the rocket-ship crew arose. "As for the danger," he said in a calm voice, "there seems little choice between the two planets. Chavroe's enormous gravity might well prove too strong for us to conquer. We might be unable to return, and what lies beneath its cloud blanket is as much a mystery as the bursts of light upon Shentol. I say, let it be Shentol!"

"And I!" "And I!" "For Shentol!" Cries came from all over the auditorium. Half the audience were on their feet.

Vo Spuritwan once more called for order.

"This cannot be decided hurriedly," he said when the League members had quieted. "These calculations of the path in space which our rocket-ship will follow must be checked. But before that, the decision must be put to a vote."

"A vote!" cried the audience. "Vote now!"

Vo Spuritwan was about to protest, but the thing was taken out of his hands and in a short time the vote was completed.

The League had voted overwhelmingly to substitute Shentol for Chavroe as the destination of their rocket-ship.

CHAPTER III

Off for Shentol!

FOR some little while nothing was done. Vo Spuritwan was deep in a serious discussion with members he had consulted previously. The audience had broken up into excitedly talking and gesticulating groups. Members of the rocket-ship crew were gathered about ic Dalfca, questioning him about their mysterious objective.

Presently vo Spuritwan faced the Hall, and attracted the attention of the League.

"Members of the Interplanetary League," he said, "one final consideration remains which I must place before you. In your present enthusiasm for the highly perilous solving of the mysteries of our neighbor in space, Shentol, I beg you not to set aside unconsidered what I will now tell you. Nofquanquot Gralon, the president of the Architectural Ore Distributors, has informed me that the ninth moon of Chavroe contains large deposits of qualo. For a rocket-load of this valuable ore, the distributors are prepared to make it possible for the Interplanetary League to construct and operate two extra rocket-ships.

"In view of this offer and the other objections which have been raised, I suggest that we reconsider the matter of the planet to be visited. In return for the danger of a visit to Shentol we gain nothing but abstract knowledge."

Vor Fanarb Justicod, the captain of the rocket-ship, arose.

"We are men of science, not merchants," he said seriously, "and it poorly becomes us to don the characters of traders."

There was something so final in the manner in which the audience received this, that vo Spuritwan realized the decision had irrevocably been made. However, he made one last effort. Turning to ic Dalfca, he said:

"If you will give me your computations of the space-course the rocket will follow, I will have them checked immediately. If they are correct, our rocket may depart within a few days."

Ic Dalfca rose and bowed slightly. "The computations are already in the hands of Varb il Thistacan who is even now on his way to Bab-vir-Gratvon where he and the university astronomers will go over my calculations with the greatest care."

Turning to the League members, he continued, "There is one aspect of this decision to visit Shentol which seems not to have occurred to you. If we are successful we may be of assistance not only to Aftwan, but to the inhabitants of the other world, thus symbolizing he great truth of our brotherhood with all the children of the Sun."

The League vociferously endorsed this view. A Martian arose and addressed them.

"It is true," he said. "Chavroe is almost certainly uninhabited while there is no question of Shentol's population. These city-builders of Shentol are experiencing some catastrophe, and the possibility that we might be of assistance to them should be sufficient to override all the perils, known and unknown, which will confront us in an attempt to reach their planet. We are fortunate to number among us one as farseeing and clear-thinking as the astronomer, Vraughn ic Dalfca Sconnefecot."

Vo Spuritwan, turning to ic Dalfca, spoke to him directly.

"Since you evince such nobility of mind, and so much magnanimity for a troubled world, it seems to me that you would wish to place yourself among the crew of our rocket-ship and visit Shentol yourself. You have no hesitation in urging others upon this flight from which they may never return."

"I consider it a great honor to be associated with our crew," ic Dalfca replied, "and the traversing of interplanetary space is to me the greatest conquest to which life may attain. I have already been assigned a place on the rocket by our captain, Vor Fanard Justicod."

The meeting broke up in a storm of applause and the League members, ascended to the landing roof, where the ruddy rays of a sinking sun bathed the towers of Thuron in a thin, red-gold light. The streets were in darkness, and as ic Dalfca guided his air-car in a swift ascent and straightened out for the Planetary Observatory, the last light of the dying day gleamed like a beacon upon the pinnacle of Thuron's highest tower.

THE long, sword-like flame flashed across a stillness older than time itself. Where now a hurtling cylinder sped, spurred by this spouting fountain of fire, before had been an emptiness unbelievable, where nothing had moved since eternity began but flashing meteors, going from nowhere to nowhere.

Now, watched by myriad, impersonal stars, its sharp, thrusting prow gleaming in the light of the Sun toward which it raced, this shining cylinder split Chaos for the first time in all time with reason and purpose.

Although traveling many miles a second, the rocket-ship might have been standing still. Behind it the blazing stars stood motionless, a vast curtain of glittering lights that swept away to infinity. Ahead was the unbearably brilliant disc of the Sun, its corona streaming out from it, and a little to one side was the palely green-glowing, sun-reflecting planet the rocket-ship pursued. And it was upon this planet that the small telescope within the ship was turned.

This telescope, mounted in a small but well-equipped observatory just after the control room, had been turned over to ic Delfca. Due to limited space it had been impossible to carry all the apparatus necessary for the light-condensing and amplifying telescope, so it was a small type similar to the terrestrial refractor which ic Dalfca now used.

From the time of the departure of the rocket-ship, nearly two weeks before, the astronomer had hardly left his instrument and, as they approached their destination, the shortened distance more than made up for the inefficiency of the small telescope. And ic Dalfca was finding the time spent gazing at the planet Shentol well worth-while.

Events upon that unhappy sphere seemed to be reaching a culmination, and Shentol was exhibiting phenomena that dwarfed anything it had produced before. Ic Dalfca was aroused to such a pitch that even the comet-like flight of the rocket-ship seemed a leisurely crawl.

Hour after hour the Martian astronomer watched the bursting and darting lights on the dark face of the planet and stared at the huge billows of black smoke that rolled up to the limits of the atmosphere. Where before there had been a flash, then a pause, then a second flash, or a darting streak of light that died away, now the sparks were almost continuous. Entire sections of the planet's surface seemed in flames.

Just after a particularly virulent burst of bluish flame had drawn a short, momentary scar across the western limb of Shentol, Justicod, the captain of the rocket-ship, entered the observatory.

"The lights still flash, ic Dalfca?" he asked wearily, dropping into a deep chair.

"With increasing frequency and magnitude, Justicod," replied ic Dalfca, turning from his telescope. "Our ship is performing rightly?"

"Perfectly." The captain leaned forward. "We are now traveling at maximum speed. Your calculations are startlingly exact, and we are just past halfway. When as much time as we have already been in space has again elapsed, we should be entering Shentol's atmosphere."

"Entering Shentol's atmosphere," repeated ic Dalfca, musingly. "And then—"

"Who knows?" muttered Justicod, rising. "Let me see this mad world."

A few moments passed in silence. Suddenly he uttered an ejaculation and his weariness passed as he looked in tense and frozen silence, then whirled upon the startled astronomer.

"A rocket-ship!" he cried. "A ship has left the surface of Shentol! I saw it as it shone in the sunlight."

He turned again to the instrument as ic Dalfca sprang to his side.

"It is! I see it again. It is small at this distance, but I can see the fire from its rockets. It is sweeping upward swiftly." He paused abruptly with a cry of horror. "A light! A pencil of light reaching after it! The ship is diving. The light has touched it." He paused again. "Why—why, the rocket-ship is falling! It is out of control."

SLOWLY he turned from the telescope and looked soberly at the astounded astronomer.

"What happened?" gasped ic Dalfca.

"The ship fell back upon Shentol," replied Justicod. "But why did it fall? And what was that ray of light?"

The two stared at each other.

"Do you think we should go on?" Ic Dalfca asked uneasily.

"Why not?" asked Justicod.

"The danger—" ic Dalfca said, but the captain interrupted him.

"We discussed all that before," he said brusquely.

"But this ship that was destroyed," pro-

tested the astronomer. "This strange ray of light—we did not know of that."

"I say go on," said Justicod.

"But the lives of our crew—" began ic Dalfca.

"Must be risked," finished the captain. "They could not be risked in a better endeavor. And I think it might be well not to speak of this incident."

And so the matter rested, and the rocket-ship sped along its unmarked path.

For five days, as the sidereal chronometer in the tiny observatory marked them, the disturbances upon Shentol increased in intensity, and ic Dalfca hardly left his telescope, sometimes even falling asleep before it. The lights of city after city had been extinguished so that now the dark side of the planet lay abandoned to the insane fire of the tremendous bursts of lights which became almost continuous.

The decreasing distance between the Martian rocket-ship and Shentol brought the planet so much closer that ic Dalfca could see, with each glaring flash, huge, somber billows of smoke rolling muddily through the darkened cities. The smoke and gases in the atmosphere had grown so dense that now, upon the sunlit side of Shentol, they could be seen drifting above the surface in huge clouds.

For five days the flashes rose to a flaming climax of ripping fire, then ceased.

Ic Dalfca could not believe it. He had been staring at a flaming globe swinging in space, its night side almost as brilliant as the hemisphere that faced the Sun. Now it lay in darkness, the shining sunlit crescent startlingly bright in contrast to the suddenly dark and quiet night side. A few scattered bursts of flame appeared; then these also vanished, and Shentol followed its course through space without violence.

For hours the astronomer peered at the nearing globe, surging majestically on its ancient path. Unable to understand the abruptly changed aspect of the planet, ic Dalfca finally called the crew and acquainted them with the somehow ominously altered behavior of the capricious planet.

After a discussion during which several cautious members of the crew counseled abandonment of the venture, Justicod arose and addressed them.

"There is," he said, "in my mind, no alternative. Whatever awaits us upon this incomprehensible world, we must go on. To turn back now, when we are almost within reach of our objective, to admit defeat and return to Aftwan as ignorant of what activates Shentol as when we left, would retard the development of astronavigation indefinitely. Our lives, since we pierced the atmosphere of our planet, have not been our own, but Aftwan's, and our fate collectively and individually is inconsequential in the face of the importance of the rocket flight we are attempting.

"We are the supreme pioneers and the symbols of the star-reaching aspirations of Aftwan's civilization and intelligence. And there is the debt of brotherhood we owe these other intelligences upon Shentol. To deny them our aid now, in the most desperate need their world has ever known, is to deny our common heritage. I say the only road open to us leads to Shentol."

Ic Dalfca rose silently and stood beside his captain, and presently, the crew were all standing.

"It is agreed?" Vor Fanarb Justicod asked.

As one man the crew raised their left "hands" in the Aftwanian gesture of assent. Their captain turned to the chief rocket operator.

"Nilfon," he said, "begin exploding the braking rockets. We enter Shentol's atmosphere in three days. . . ."

SHRILL screaming of friction-heated air made a background for the deep, spasmodic thunder of the braking rockets. Water vapor, boiled into clouds of steam about the space-ship and so clouded the ports that the Martians could see nothing of this new world they had entered.

On they rushed, the ship straining and writhing under the terrific heats and pressures brought to bear upon it. The rocket operators were laboring at unbelievable speed, firing discharges from various rockets at the command of Justicod who, tense with anxiety, snapped terse, quick orders from the control room port with machinelike rapidity. This port, cooled by a stream of cold air across its outer surface, permitted some slight view of the outside.

Other members of the crew were hastily unscrewing the taps that permitted streams of liquid air to rush over the outer surface of the ship, which was rising to dangerous temperatures. The Martians were astounded at the rapidity with which the air pressure

was increasing as they dropped toward the surface of Shentol. The astronomers had warned the stellar navigators of the high pressures they would meet upon Shentol, but even their maximum estimate had already been exceeded and the rocket-ship was still miles above the surface.

For another hour their wild flight through the screaming air persisted, and even the insensitive Martians were aware of the rising temperature. Then the giddy rolling and writhing of the ship slackened, and presently the temperature began falling.

Gradually the thin shriek of tortured air grew fainter and, as the rolling clouds of steam dissolved behind them, Justicod drew a deep breath. The worst was over and the ship now under control.

CHAPTER IV

Ravaged World

AS their speed grew less and less, the stern rockets were set firing gently and the space-ship cruised leisurely across the face of Shentol. Space was at last conquered and spanned!

The entire crew rushed to the ports to peer out for a first glimpse of this strange, mad new world, and what they beheld was probably the greatest wonder this sphere had to offer them. They were drifting above an ocean, and desert-trained eyes looked on a sight no living member of their race had ever seen before—water without end. From horizon to horizon it extended, unbroken by land, heaving in ceaseless movement, foam-dappled and wind-rippled.

An unreasoning fear seized even these science-trained technicians. They had known Shentol's surface to be largely composed of water, but water as seen through a telescope from a point millions of miles away and viewed from a mile or two above its surface is totally different. They had studied maps of Shentol's seas and had often watched them from Martian observatories, but never had they conceived the sight of an ocean, heaving and surging beyond the reach of eyesight.

For a while the astronauts were engaged in marveling at its strangeness. Exclamations and exchanges of opinions flew back and forth. Then the problem of the immediate future presented itself, and the crew asked the same question that ic Dalfac was asking Captain Justicod.

"But land," Ic Dalfca was saying. "Where is there land?"

"We are heading toward an enormous continent now," replied Justicod. "I caught a glimpse of it for one instant just before we struck atmosphere. It is really two continents, connected by a narrow strip of land, and extending from pole to pole."

"It is Valn-zwa-tolcaln!" exclaimed ic Dalfca. "The northern of the two continents is the seat of one of Shentol's greatest civilizations. Or was."

"And as we passed over a sea-coast city," said Justicod, "the clouds parted long enough for me to see it."

"The inhabitants?" asked ic Dalfca.

Justicod gestured negatively. "I had but an instant's vision," he said. "I saw only the vague outlines of a city."

For two hours more they sped over the tossing wastes of water then, faintly along the horizon, a long dim line appeared. Excitement flared up anew. Soon they would come upon a city, and even though they would be unable to converse with its inhabitants, they would learn something of the strange disaster that had overtaken Shentol.

An island flashed by beneath them. They paid it no heed, for it was a desolate waste, torn by huge, gaping craters. But it had once harbored life, for strange and inexplicable pieces of machinery were scattered about. Broken and crumbled walls gave mute testimony of buildings, long since disappeared.

The coast was now plainly visible. It, too, seemed a land wrecked by some colossal disaster, its surface scarred and rent, the vegetation blackened and dead. It fronted the sea with a wide strip of white beach, upon which huge breakers surged, towering into mile-long combers which crashed savagely upon the white sand.

The rocket-ship hovered above this beach briefly while the Martians watched the pounding surf, pondering the cause of this ceaseless activity. The consensus of opinion was that it was probably produced by disturbances of the ocean currents. The sight of this vast area of moving water was, however, one of the most fascinating of all the wonders the Martians had witnessed since leaving their native planet, and they cruised along the shore-line lost in contemplation of the sight. At last Justicod called them from

their staring.

"If we are to locate a city before nightfall," he said, "we must go on."

Beyond the beach stretched what had once been a fruitful and populous region, but was now a blackened ruin. As they rose slowly above it, they perceived miles of roadway, but broken and wrecked almost beyond recognition. Here and there, by some miracle untouched, stood groves of trees, gleaming brightly green, and bearing golden globes of fruit. Houses in all stages of ruin dotted the countryside. Far away towered a long, unreal-looking range of mountains, their snow-tipped peaks, seeming to float in the purple of distance and approaching night.

THE sight of those roadways sent a thrill coursing through the visitors. The final and complete evidence of the activity of alien intelligences lay spread beneath them, mute and enigmatic. There they were—roadways, revealing so much and so little. What shapes of life moved, or had moved, along those winding ribbons? What engines of transportation had used them; from whence did they come; to what destination had they moved, and for what purposes?

Then they realized what they should have noticed immediately—the absence of life. No living thing in all that vast expanse moved but the wind-stirred trees.

As though a cold wind had touched him, ic Dalfca shivered. Had this been a wilderness, a desert, or a savage jungle it would not have seemed so empty, but the roads and vacant buildings cried aloud the absence of their creators. The silence was that of one newly dead.

By now the rocket-ship had descended upon a broad highway, seemingly one of the main arteries of traffic through this region and, by some chance, but little damaged by whatever terrible cataclysm had swept the country with destruction. The crew of the ship had gathered about the chemist as he tested the surface atmosphere.

"Tremendous pressure," he said to Justicod. "The astronomers will be astounded, their calculations are so far at fault."

"Can we bear the pressure?" asked Justicodd.

"Easily," replied the chemist, "after a few moments. But there are many strange elements in this world's atmosphere—elements that should not be natural ingredients in Shentol's atmosphere. I do not understand it. Can the astronomers have erred in this also?"

"That is unimportant now," interrupted Justicod. "Are these elements dangerous to us?"

"It is difficult to say. Some of these gases, in quantity, would be fatal to all life as we know it, and if they are native to Shentol, the inhabitants must be strange indeed. Besides these gases, oxygen is present in enormous quantities. It may have disturbing effects."

All were silent. A rocket operator peered out as though to see these obscure gases. Far down in the ship a motor thumped and paused, thumped again.

Suddenly, Justicod was at the exit port, dexterously manipulating the controls. As the inner door slid back, he turned to his crew, who were watching him frozenly.

"Wait until I signal before any others leave the ship," he commanded, and drew the door shut behind him.

There was a scramble for places at the transparent ports. Justicod appeared outside the rocket-ship, moving with labored slowness to the center of the roadway. The crew stared at him tensely. Abruptly the captain sat down upon the smooth surface of the roadway, then stretched flat upon his back. The crew could see the rigid, chitinous skin of his body heaving and straining as he breathed. For five minutes or more he lay there, occasionally gripping his chest and throat as though in pain, and several members of the crew made an attempt to go to his assistance. They were sternly ordered back by the second in command.

Finally Justicod sat up, his breathing quieter and more normal, then dragged himself heavily to his feet. He essayed a few steps back and forth across the roadway and eventually seemed almost at ease, though he still walked with a slight effort. One of the impatient rocket operators thumped upon the port and Justicod looked up. Seeing the unspoken request, he nodded and beckoned them to join him. There was a rush for the exit port.

As they emerged, the captain instructed each to lie flat and breathe as slowly as possible. Ic Dalfca stretched himself upon the roadway, conscious of the tremendous weight of this thick, young atmosphere. It pressed relentlessly upon him, squeezing even his hard and armorlike skin painfully. The deepest mines of his native planet, where the air

had seemed so close and heavy, were as mountain heights in comparison to this. He seemed to be smothering, his lungs laboring painfully under the bite of the thick oxygen.

Added to this was the crushing grip of Shentol's gravity. Ic Dalfca's body was almost three times as heavy as upon Aftwan. He choked back a groan as his body strained against the remorseless drag. With an effort of will, he forced himself to stand erect. He seemed shod and gloved with lead, hands and feet dragging ponderously.

Soon the majority of the crew were moving sluggishly about. In the gathering dusk they resembled a company of weary, exhausted and hopeless men seeking a resting place for the night. Their heads and arms hung heavily and their knees—or the joints corresponding to knees—bent beneath the increased weight of their bodies. One surprising feature of their arrival upon Shentol, they afterwards discovered, was a minute but measurable shortening of their bodies.

AN adventurous rocket operator discovered the first Shentolian. Despite the discomfort caused by the gravity and heavy air, this explorer had succeeded in progressing some distance along the roadway, and his excited voice summoned the remainder of the crew.

They made a laughable crew as they straggled slowly toward him, stumbling and drooping wearily, but the rocket operator's attention was fixed wholly on his find. Soon the entire group were gathered about this object which was sprawled on the short green grass which bordered the roadway.

The creature was smaller than the Martians, but patterned on the same general plan—four limbs, a body, and a head equipped with sense organs. The two limbs nearest the head, which was placed upon a short neck, were more slender and not as long as the two with which the body terminated, and were equipped with clusters of digits, five upon each limb, which suggested immediately to the Martians that the Shentolian walked erect upon the longer and heavier pair of limbs.

The body was covered almost completely with a brownish cloth, leaving only the head and the extremities of the upper limbs exposed. The rocket operator touched the being gingerly and with no little awe upon the shoulder, but even before he did so, the members of the crew knew that the Shentolian was dead. Beside the body lay a long metal tube, fitted at one end with a curious wooden block.

"This, then, is a Shentolian," said Justicod. "A reasoning, thinking being of another planet. He is curiously like us—more than I would have anticipated—but dead. Our sister planet gives us a grim welcome."

A chemist who had been kneeling beside the body, arose to his feet.

"This Shentolian," he exclaimed, a note of suppressed fear or excitement vibrating in his voice, "was killed by one of the gases we noticed in the atmosphere. This gas has been present in quantities great enough to suffocate him. This is proof that the gas is not native to Shentol's atmosphere."

Silence descended upon the group and they turned to observe their leader's reaction.

"And what of that?" demanded Justicod, irritably. "We are aware that a disaster of some kind has visited this planet. This Shentolian is undoubtedly a victim. We must expect such."

The group stood silently in the deepening darkness. A faint wind stirred, moving with small, secretive whispers through the nearby trees, and it seemed to ic Dalfca to bear a suggestion of some strange, disturbing odor. He shivered.

"Come," commanded Justicod. "We must return to the ship. It is almost night."

The rocket operator who had found the body had picked up the metal tube and was examining it with interest. He discovered a small curved lever protruding from the tube. A narrow metal guard arched over it. Curiously, the rocket operator manipulated the little lever, and suddenly it gave beneath his pressing fingers. It sank slightly—and the still gloom was split with a thunderous detonation and a brilliant flame stabbed out from the end of the tube.

The rocket operator was flung flat upon the ground, the tube leaping like a living thing from his hands. Hastily the others returned to him and the Martian pointed speechlessly at the bit of pipelike metal. Justicod picked it up and tucked it beneath an arm.

"Come," he ordered, striding firmly off toward the ship.

The last glow had disappeared from the western sky and the blue of the zenith was now dotted with sharp, bright stars. A planet glowed with liquid white in the west. The Martians were looking upon their first Shen-

tolian evening, and finding it far more fraught with soft and youthful color than their own chill, ancient home-world.

In the morning the explorers pressed on, following the roadway, and they began to understand the unnatural stillness of this region. Here Death had trodden heavily and left a grim trail behind. Everywhere they saw bodies—sprawled upon the roadway as though flung carelessly by a giant hand, half-hidden in the grasses of the open fields, crumpled into shapeless huddles among the trees, and even hanging from windows of such houses as had escaped destruction.

"A vast host has died here," murmured ic Dalfca, awe-stricken at the numbers of the dead.

"Curious," mused Justicod, "the lack of variation in the cloth these Shentolians wear. Some wear gray and some wear brown, and rarely is there another color. I wonder if it has any significance?"

As they progressed the terrain gradually altered, the fields and woodlands dropping away and the buildings increasing in size and numbers. And again the appearance of desolation strengthened. Where the open country was torn and mutilated, the eye glided over the scars, already half-healed by the green carpet of vegetation, but the broken walls and wrecked buildings with their stark, jagged splinters of upthrust metal caught the glance with a mute and dreadful significance.

The shattered suburbs drifted beneath them—silent, a ghastly chaos—then the vegetation, but for scattered parks and squares, disappeared altogether and the Martians found themselves in a Shentolian city.

THE colossal ruin here struck them dumb. Not a building stood undamaged. Walls were smashed flat or leaned at fantastic angles. In places, splintered columns were all that remained to show where buildings had once stood. Giant steel girders were twisted, and tremendous, hundred-story skyscrapers often carried their upper floors undamaged while their lower sections were completely gutted. Fire, or some agency of terrific heat, had been at work, and floods of molten metal had swept through the streets, white-hot, leaving as they cooled, long strips of shining smoothness, covering the horrors beneath.

Bridges, towers, elevated railways, stood in fragments, ripped, torn, or black with fire. One high level remained partly undisturbed, sweeping airily across thousand-foot gulfs. It connected four giant structures which, except for their stubborn, metal framework, were entirely demolished. The Martians brought their ship closer, slipping in and out between the ruined buildings to approach it. It was untouched, its long, arching leaping lines unmarred. The lights which were mounted at intervals upon the white metal of its low walls were whole.

The Martians decided it had been used for motor traffic between the buildings, for a vehicle stood deserted upon the broad, smooth expanse of its surface. Its driver, apparently, lay nearby, sprawled face-down. About the body the slick surface of the level was pitted with many small holes.

Justicod twisted the ship clear of the buildings and they swept in a wide arc above the city. From this height they studied the city carefully, using small telescopes, and cruising about slowly.

"There is no need for further exploration here," said Justicod, at last. "No Shentolian draws breath in this necropolis. We will seek other cities. Somewhere some must live."

They proceeded south along the coast, sometimes going a few miles inland. Once they went as far as the range of mountains and rose above them to see range upon range beyond, snow-capped, silent, and seemingly untouched by whatever catastrophe had overtaken the planet. Nowhere did they find life, with the exception of insects, which, unknown upon Aftwan, were a novelty to the explorers. The butterflies, in particular, gaudy and colorful, attracted the Martians, and one species, with beautiful red and black wings, was migrating southward, huge fluttering flocks of them seeming to follow the slow course of the space-ship.

Days passed and the Martians visited many small towns and hamlets, and in all, the same silence prevailed. Some were deserted, but in others the dead were scattered like leaves before an autumn wind. Many things the Martians learned about the Shentolians—among others, the surprsing fact that age altered their appearance, for once the Martian had matured, his chitinous exterior preserved him throughout his life as he was, save for the chances of accident.

But they could find no clue to the cause of the desolation. There were no signs of volcanic activities. Volcanos might have explained the presence of large quantities of deadly gases, of which they found increasing evidence, although the gas itself had dissi-

pated, but volcanos could never explain the other phases of the destruction so rampant.

CHAPTER V

One—Alive

ONE morning the Martians discerned the towers and pinnacles of a host of skyscrapers—enormous, soaring buildings standing in a crowded mass, but covering a vast area. They sent the space-ship into a steep ascent quickly that they might perceive wholly this, the greatest Shentolian city they had yet discovered.

They looked down upon it, a breath-taking sight. They had ascended to a great altitude and the serrated mountains, the coast line, and the vast expanse of the ocean lay stretched out below like a huge relief map. A miles-long, land-locked bay broke the coast line, and around its shores and climbing the low, circling hills was the city. The bay was dotted with small islands and joined to the ocean by a strait. Other smaller bays and waterways fringed the shore line of this giant bay.

The explorers felt that never before had they seen a Shentolian city—the others had been small towns. Here the buildings topped and peered over the surrounding hills, and levels and traffic ways arched one above the other in amazing numbers, although few stood now unbroken. Roadways led from the city, and vast numbers of double metal rails, whose purpose was obscure to the Martians, wound and criss-crossed about the fringes of the metropolis, vanishing finally in the obscurity of distance or among the hills and mountains.

Occasionally a huge metal engine stood upon these interweaving rails while the roadways were littered with the smaller metal machines of transportation, which the Martians had come to associate with Shentolian travel. Over all lay the heavy hand of the destroyer. Everything was shattered, burned or fused, and the central city section in particular was a stupendous mass of wreckage. They were too high to see, but knew the roads would be clogged with the bodies of the dead.

The explorers dropped their ship slowly down upon the city, absorbed by the sight as minute by minute more evidences of destruction lay revealed. Presently they came to rest upon a broad square near the area of greatest destruction. From the ports of their ship they looked out upon a scene that might have been laid in Sheol itself.

The square was a veritable shambles. Shentolians lay everywhere—all ages, in every costume and position, singly and in wild tangles. Over and under them lay the debris of the buildings which bordered the square, of which little remained standing, and the paving of the square was ripped and torn, blasted with the marks of terrific heat. Here and there stood huge machines, inexplicable in purpose to the Martians. There were several which were predominantly huge reflectors equipped with a maze of coils and condensers, and other electrical equipment. The physicist of the party judged them to be machines for the creation and direction of vibrations. Others were long, hollow metal tubes, similar, superficially, to that which had exploded with such fire and noise in the hands of the rocket operator, but on an enormous scale. Many were mounted upon wheeled vehicles.

These machines had seemed to attract especially the forces of the destruction that had swept the city, for about them the searing heat had blazed with ghastly effect. Many of the metal tubes had fused and melted, dripping a torrid, horrible dew upon the Shentolians near them.

Completely stunned, and overawed at this vision of death gone mad, the Martians stood silent. Then Justicod aroused them.

"We will explore this city," he announced calmly. "Here, if anywhere in this unhappy, stricken land, we will discover what has caused this holocaust—and its survivors, if there be any."

Preparations were immediately begun for the proposed exploration, each member of the expedition being equipped with a small radio compass sensitized to a special wavelength which would be continually broadcast from the ship. The compass would, as long as this transmitter was operating, give the direction in which the ship lay. In the vast, ruinous maze of the city, the Martians felt the chance of becoming lost was great.

Each explorer carried a day's ration of the concentrated food which made up the principle part of their diet and a tiny flask of water which was more than sufficient for their frugal need. Of weapons they had none

—violence was non-existent on their own planet, and they made the natural error of judging others by themselves. Neither did they expect to be imperiled by living things in this land where they had found no life larger than birds. The possibility of attack by wild beasts had been discussed before they left Aftwan and it had been the general opinion that in a civilization as great as that which manifestly flourished on Shentol, the beasts of prey would have long since disappeared. They were unacquainted with the greatest of all killers.

WEAPONS of course, they did bring, but as they believed the destruction so rampant about them to be the result of unleashed natural forces, titanically destructive, they left the weapons in the ship.

Ic Dalfca made one of the small party which headed eastward into the heart of the city, into the area of greatest demolishment. Other groups made off in various directions, while Justicod and several technicians remained in the space-ship.

Hampered by the more than double gravity and the dense and heavy atmosphere, ic Dalfca found travel difficult, even on level ground. In this grotesque maze of ruins, it was trebly so, and the astronomer soon found himself falling behind his companions.

Vraughn ic Dalfca Sconnefecot had seen his planet revolve four hundred times about the Sun. He was no longer young and could not accommodate himself to the changed conditions as readily as the more youthful members of the interplanetary expedition. However, this worried him not at all. He could not get lost, and he found much to interest and puzzle him as he progressed through the ruins.

The city, he reasoned, must have been one of the last to be destroyed. Broken metal was still bright and untarnished at the points of cleavage, and decomposition had as yet made, little headway. One curious condition which puzzled him was that the inhabitants had made little or no attempt to flee the disaster, of whose approach they must have been aware. In other cities and towns there had been a marked effort at evacuation, the roadways being clogged with bodies, and the streets empty except for the gray and brown-clad Shentolians whom ic Dalfca had taken to be scientists willing to risk their lives at the storm center on the chance of discovering some salvation for their planet.

Here, however, the inhabitants had remained in the city—a desperate gesture of hopelessness, thought the Martian astronomer. Many were locked in each others arms, and some seemed to have been struggling. All, or nearly all, were possessed of those metal tubes, one of which had behaved so disturbingly in the hands of the rocket operator.

Ic Dalfca climbed through a broken wall and came out upon a broad thoroughfare, free of wreckage in the immediate vicinity. He strode laboriously down the street, keeping to the center to avoid the chance of falling masonry. A gaping crater, half-filled with a ghastly rubble, forced him to the side of the street, and the Martian suddenly caught sight of something that intrigued him. It was an effigy of a Shentolian, and lay beside the body of one of the smallest Shentolians he had seen.

The Martian approached and studied the thing carefully. It was small and brightly painted, having red lips and cheeks, and yellow hair. Once crisp, snowy cloth had wrapped its body, but it was now soiled and sadly draggled. The little image's limbs and head were made, as ic Dalfca discovered as he cautiously touched it, of a hard, smooth material, while its body appeared to be stuffed with soft cloth.

The Martian wondered amazedly if the Shentolians had been given to fetichism and picked the image up. And ic Dalfca received the surprise of his life, for, as he righted the little figure, bringing its head upward, its eyes popped open and it said, distinctly and mechanically, "Ma-Ma! Ma-Ma!"

The old and weary visitor from another world stared at the thing in his hand, then carefully replaced it at the side of the still little figure at his feet. Far off, a wall collapsed, booming hollowly.

For another hour ic Dalfca made his way through the colossal wreckage. He climbed from level to level and invaded apartments whose purpose was totally incomprehensible to him. Strange machines mocked his ignorance on every hand and once he nearly killed himself by stepping into a small, empty compartment which he took to be a closet. He had no sooner entered than the door slid swiftly shut behind him and the tiny room shot skyward in a smooth, accelerating rush.

Panic seized the surprised Martian and he instinctively tugged at a control in one wall of the compartment. The room stopped ris-

ing as smoothly as it had begun and the door slid open. Ic Dalfca lost no time in getting out. His surprise was great when he discovered, upon looking from a window, that in the few seconds in which he had been in the mysterious room, he had soared high above the ground level.

As the Martian astronomer made his way slowly down through the building, with difficulty in the more demolished sections, he looked into apartments. Even in the higher floors he found bodies, and ic Dalfca concluded that this city had succumbed to some noxious and deadly gas, but from whence the gas had come, he could not guess. Few of the bodies here were damaged, although in several places some huge projectile seemed to have crashed through the walls, destroying building and Shentolian alike.

Many of the floors were apparently living quarters, particularly the higher ones; others defied ic Dalfca to identify them. He climbed steadily downward, in places through the bare framework.

OUTSIDE, the city lay still and silent in the afternoon sunlight. Nothing moved in all that vast expanse of tumbled stone and seared and twisted metal. Ic Dalfca wondered where his companions might be. Soon, he knew, he must be turning back; only a few more hours of daylight remained.

He had just stepped through a shattered doorway when he received evidence of his companions' nearness. A flurry of excited shouting came from somewhere nearby. Alarmed, ic Dalfca hurried toward the sound. As he rounded the corner, he beheld a tableau which brought him to a halt, astounded. Before him, spread out in a line, and evidently wildly excited, stood his companions, behaving in a manner that led ic Dalfca to suspect they had taken leave of their senses. They were advancing slowly and gesturing, their attention centered on something beyond them.

The astronomer peered between two of his shipmates—and stood rooted by amazement at what he saw. A Shentolian—alive—was retreating as the Martians approached him. He was apparently frightened, but even more he was enraged. He retreated with reluctance, even with difficulty. Ic Dalfca gazed with consuming curiosity at this first living Shentolian he had seen.

The creature was astonishingly dirty. The brown cloth in which he was enwrapped was torn and muddy and smeared with dark brown stains. His face and hands were almost hidden under their accumulated dirt, and around his mouth and jaws stood a rough stubble of short hair. From the streaked and haggard mask of his face blazed a pair of burning, and to ic Dalfca's mind, not a little mad, eyes.

As the Martian watched, the Shentolian moved again and ic Dalfca saw that one leg dragged uselessly. He hitched himself backward a few feet and halted again, apparently near the point of exhaustion. He understood no word of what the excited Martians were calling to him, and misinterpreted their actions completely. In his hands he held one of the long metal tubes which seemed part of the equipment of all Shentolians.

Again the Martians advanced upon him, one of them calling:

"We come to help you, Shentolian. Let us take you back to our ship and we will cure your ills."

The Shentolian raised the tube and pointed it at the speaker. Again he slowly dragged himself backward. The Martian halted and the injured creature took advantage of the respite to lower his tube and, using it as a crutch, hobble away from them until he was backed against a wall and could retreat no further. His audience grouped themselves in a half-circle about him and the situation seemed deadlocked. The Shentolian was gasping painfully and seemed far gone, but he held himself doggedly erect, propped against the wall, and his blazing, feverish eyes never ceased their alert scrutiny of the Martians.

A Martian moved suddenly, and instantly the black, circular hole in the muzzle of the tube was directed upon him. Uneasiness swept over the Martians, although the significance of the tube escaped them.

"It is a weapon," murmured one, and the Shentolian's dark, hot eyes were instantly upon him. He became silent.

"Not a ray generator," said an assistant navigator.

"It might be an anaesthetizer," suggested another.

"An anaesthetizer does not spurt fire, nor make a loud sound," protested the navigator, remembering the rocket operator's experience with the tube.

"Cannot we make him understand we mean no harm?" asked ic Dalfca, making his presence known.

"We have tried," he was answered. "He cannot understand our speech, and he pays no attention to our gestures other than wave us away."

"He is dying, I think," announced one of the Martians.

"I don't believe his weapon can harm us much," said the assistant navigator. "There is probably as little need for weapons here on Shentol as there is on Aftwan. All the more dangerous animals must already have been exterminated. The tube is probably a feeble toy which we can easily overcome."

The Shentolian's breathing was becoming easier.

"It will soon be dark," said ic Dalfca, pointing to the lengthening shadows. "We must either persuade this being to come with us or desert him. To return to the ship in darkness would be a perilous undertaking among these ruins."

The Martians nodded and began a slow approach toward the Shentolian who tightened his grip upon the tube and broke into feverish speech.

"No—no!" he exclaimed. "It is enough! You have done enough!"

The Martians halted, amazed at this outburst, of which they did not understand a word. The Shentolian continued, evidently the prey of a wild and fearful despair.

"Go away," he cried, waving the tube at them. "Go away, and let there be peace. Fools! There is nothing left. What does it matter that I am alive, when so many are dead? What if one is left alive? There are enough dead! Look at them!" He swept a long arm about him. "Yours, too," he continued. "Yours are dead, too. In millions. You are mad to continue. There is no longer any Eastern Entente, nor a Western Alliance. You are mad to persist. What can it matter if one lives? The world is gone, destroyed, wiped out. Man is extinct and we are ghosts! Go away!"

THE effect on the Martians of this wild speech, delivered in a voice of tragedy and with uncontrolled gestures, was stunning. They stopped and stood staring. The Shentolian, in the grip of his emotion and forgetful of his injuries, stood away from the wall, staggering weakly.

"I tell you, *go*!" he shouted. "The world is dead. And we are dead, too, or soon will be. You cannot hide yourselves with those faceless masks! Death will find you."

The Martians did not move. Suddenly the Shentolian became quiet. He looked about the circle.

"You will not go?" he asked, almost pleasantly. "You wish to continue to the end? Very well. Perhaps it is better so. Sirs, the last engagement in the final war begins."

And before the Martians had recovered from their initial surprise, the Shentolian had raised his metal tube and the silence of the city was split and sundered by the rattling thunder of rifle fire.

The young assistant navigator started and toppled slowly forward, a look of hurt surprise in his eyes. . . .

Justicod trampled up and down beside the bed on which the Shentolian lay. Beyond it three other beds held quiet occupants.

"—and then he put this weapon to his shoulder and it belched fire and noise as did the other which the rocket operator found, and our three companions fell to the ground," ic Dalfca was explaining. "Then the Shentolian staggered and uttered more of his strange speech—and collapsed himself. We brought them all back, although it was difficult in the darkness."

"It is marvelous that the Shentolian was able to stand at all," said the chief physician. "He is at the point of death."

Justicord walked to a port and gazed out into the silent darkness. The city was a deeper black against the soft night sky—a lumped, jagged, grotesque blackness faintly lit by the thin starlight.

"This city must be searched thoroughly," he said. "There may be others alive. Equip each searcher with an anaesthetizer and have any living Shentolians brought to the ship."

The Shentolian moved restlessly in the straps which bound him, muttering in his delirium. His voice steadied and grew clearer.

"No more," he said, "not ever any more forever. And if no one is in the forest when the tree falls, is there a sound?" He laughed crazily, then suddenly changed, and became quiet. "Yes, sir," he said tensely. "First Battalion, sir. On the double." For a moment he was silent, then broke into harsh sobs. "But it was wiped out!" he wailed. "Wiped out to a man."

Justicod approached and stood looking down upon the Shentolian. "If only we could understand him," he murmured. "He knows what manner of doom has come to his planet. He knows, but cannot tell us. I am begin-

ning to have a suspicion of the nature of this disaster, but we must hear it from a Shentolian."

"You think you know what force has wrecked this planet?" asked ic Dalfca. "What was it? A rain of meteoric particles? That would account for the destruction by heat and collision. You think Shentol encountered a swarm of meteors?"

"No," Justicord replied. "No. My suspicion is too terrible, too wild and grotesque to present as an explanation. We must find a living Shentolian, this one or another if this one dies, and learn his speech, or teach him ours, then hear from him what has occurred. We will resume the exploration of this city in the morning."

For two weeks the Martians combed the ruined city, fruitlessly. Enormous sound amplifiers were erected, facing in every direction, and many and various noises were traced down and investigated, only to prove to have been produced by natural causes or by some of the small animals which were invading the city in larger and larger numbers. Mile by mile the city was gone over, and nightly an alert watch was kept for possible lights.

The result was nothing, and at the end of two weeks the Martians were convinced that no other living Shentolian inhabited the city.

Conditions there had also become impossible even for the insensitive Martians. The air was horribly foul, and Justicod feared some strange plague of this unknown world might attack his crew. The city was now flooded with a horde of animal scavengers—fast breeding little animals some few of which had escaped the sweeping death that had gripped Shentol. These survivors, presented with a vast supply of food, had burst into a seemingly mathematical progression of reproduction and, free of their natural enemies, the larger carnivorous animals, which had failed to pass through the ordeal as successfully, bade fair to swiftly purify the city.

One morning, therefore, the space-ship soared up between the silent towers and into the bright, sweet light of the rising Sun, to begin the long, wandering search that was to consume many months and take her into every continent and across all of Shentol's oceans. South they headed first, toward the tropics, where the disturbances, as seen from Aftwan, had not been as great. Autumn came, but the Martians were by then well below the twentieth parallel and perceived it only as a period of itense rains.

CHAPTER VI

To Rise Again!

MONTHS passed and the astronauts sought in vain for any sign of reasoning from the terrific shock of the catastrophe, although a great number of Shentol's life-forms had disappeared completely. Birds, in particular, were rare. The vegetable kingdom, however, had, in the time of Shentol's stress, clung doggedly to life and now was experiencing a resurgence of phenomenal proportions. In this southern continent they were now exploring, the Martians found many huge cities buried beneath a waving green canopy.

A few brief months and the seemingly eternal handiwork of the Shentolians was lost and unknown beneath the waving, nodding green fronds. Creepers climbed, sent subtle, thin fingers into cracks, forced their way steadily deeper to let in erosion, and roots quietly groped through the subterranean darkness, swelling, bursting paving and undermining foundations, and followed by the drip and trickle of water. The final and supreme civilization of Shentol was swiftly joining the older, cruder civilizations the jungle had swallowed centuries ago.

The Shentolian they had found in a dying condition was slowly recovering under the ministrations of the Martians. The Martians whom he had wounded had been quickly healed, and during their convalescence had undertaken the care of their starved, exhausted, fevered guest. Having sunk until the flickering life-spark threatened to disappear, the Shentolian, sustained by the marvelous medical science of the Martians, had at last given evidence of returning strength.

Inch by inch the Martians had fought to retain each slight improvement, and finally the Shentolian, thin and pale, but with the light of reason in his eyes, had been pronounced definitely past all danger. For a month he lay in his cot, his starved body slowly filling out, his wrecked system gradually healing. He watched, with wide, puzzled eyes, the comings and goings of his nurses. Once or twice he essayed to speak to

them, but was made to understand he must be quiet. The Martians were not yet ready to take up the task of establishing communication.

Later, when he was permitted to leave his bed and took his first faltering steps about the space-ship, the exchange of vocabularies was begun, and the Shentolian learned the sounds by which his hosts identified their various utensils.

The Martians, too, were learning their guest's language, and as he gradually extended his activities, the exchange became more and more rapid. Most of their conversations were carried on in the speech of the Shentolian, as it was almost impossible for him to reproduce the sounds they made, while the Martians had much less difficulty with his.

The question that had first occupied the Shentolian to the exclusion of all else had been that of their identity and from whence they had come. When their origin had finally been made clear to him, he had gone off to a window-seat and, for a long afternoon, sat staring silently down at the waving green treetops gliding by beneath him.

Later they conveyed to him that they were seeking others of his kind, and he shook his head hopelessly. When they pressed him, and supplied him with maps they had gathered, he directed them from point to point where he thought some few might still be living. Month by month, patiently, they wandered on, visiting city after city. Some were totally destroyed or drowned in green jungle. All were dead and silent, with the silence of complete cessation.

They came to the narrow southern tip of the continent, a bleak, grim, storm-harried cape, rock-bound, surf-beaten, thrusting unyielding ridges out into the tumbling, icy waters of the gray polar seas, and bore on into the frozen, white wilderness of the South Pole. Here small, ridiculous, wingless birds watched their passage with pert interest. Once they observed a wrecked machine and a few lost, lonely, and deserted buildings.

Turning east they worked their way up through a vast, luxuriant continent where they saw huge herds of animals, either replenished in numbers by a relatively few survivors, or untouched by the catastrophe. And here they met their first impasse. In places, particularly near the equator, this continent was one vast, teeming jungle, and occasionally the Martians on watch reported, as they glided slowly above the leafy curtain, sudden glimpses of furtive movements on the ground below. Whether these were signs of reasoning beings or not they could not determine. Upon landing, nothing was found.

The Shentolian explained that this continent had once been the home of a vast race, comprising millions of individuals, but that if any remained alive, they would be only the most uncivilized of savages—creatures so remote from his world as to be totally unaware of it, and, in the deepest wilderness, possibly untouched. This concept of civilization and savagery, extant at the same time upon the planet, struck the Martians, whose single race had advanced in unison, as monstrous.

JUSTICOD began the questioning of the Shentolian, and bit by bit, in the presence of his tense, absorbed audience, he built up a picture of his world as it had been, and its history. Meanwhile they pressed on, crossing an inland sea and entering a region where the destruction passed belief. The very face of the earth seemed altered. This place they hurried over.

A year passed and another enormous continent was explored from east to west, north to south. Towering mountain ranges, vast northern swamps, deserts, plains, rolling hills, all passed beneath the tireless keel—a medley of civilizations, amazing the Martians with their range and variety. There were sunny agricultural areas, now left to drift back to the wild; great stately cities, lonely villages high on craggy mountain flanks, harbors, roadways and, in the eastern continent, strange, colorful cities with houses, many-roofed, weirdly built, weirdly destroyed. Once they came upon an ancient wall, huge and broad, and followed it for many empty miles, while the Shentolian told of its history.

Turning westward again, the Shentolian told them of an island, or small continent, just off the coast, which had been the center of the vast empire.

They entered it from the north, creeping slowly southward to its heart, and beheld that which transcended anything they had ever seen before. Here civilization had flowered, surpassing that of Mars as Mars surpassed that of the huge jungle-clad continent. Industry had made its home in this little continent, and for mile after mile the space-ship cruised over mine and factory,

interluded with once pleasant parks and woodlands. But Destruction had trod heavily everywhere.

In the capital city they landed, in a wilderness of crumbled stone, smashed and flattened buildings, and rusted metal. Their short excursion through its ruins brought them before what had once been a great building. A long, wide flight of stone steps remained, and in the midst of this flight, upon a heavy stone block, a sculptured animal reposed.

Its massive head upflung, it gazed in somber dignity at the wilderness of ruins before it. A savor of old majesty, of ancient splendor, clung to this stone beast, as it stared with high-held head at the end of its history, and the Martians stood to look at it.

"What is it?" asked ic Dalfca of the Shentolian.

He, too, gazed at the figure, his hands nervously twisting together.

"The British Lion," he replied, at last.

In spite of its destruction, London had given much to the Martians in the way of books (which the Shentolian, to continue using the Martian term for the terrestrial, was teaching them to read) and machinery. All available space in their ship was being utilized for the storage of such cargo, and they finally concluded they could carry no more. Mars itself was again approaching opposition with Earth, nearly two years having elapsed since they had first streaked down through Earth's atmosphere, and the Martians determined to begin their return journey, meeting their planet in space as it swept around its orbit toward them.

They had now a vague picture of the history and accomplishments of Earth's people as told to them by their guest, although much of it was incomprehensible to minds so alien. But the cause of the final scourge, of so much importance and curiosity to the Martians, had been avoided in their discussions. Justicod had given orders that the Shentolian was not to be questioned about it until he, Justicod, was ready to question him, and the Shentolian himself not only made no reference to it in their talks, but seemed actually to avoid the subject.

Now, however, Justicod felt it time to have his suspicions verified or proved wrong. Therefore, on the eve of their departure for Mars, he assembled the crew in the control cabin and addressed the Shentolian, who had watched in astonishment as the entire crew filed into the narrow room.

Briefly Juticod outlined the events that had fostered this visit to Shentol, told of the Interplanetary League and of the reasons for which Shentol had been selected as the planet to be visited. The Shentolian listened in growing astonishment as the flashing lights which the Martian astronomers had seen on Shentol were described.

"And so," concluded Justicod, "this disturbance upon your planet was the primary factor in the society's selecting it as the destination of our ship. We felt it to be all-important for us to discover the nature of your catastrophe in order to guard against a possible like visitation upon Mars. Or, if on too grand a scale to control, we of Aftwan wished to be in a position to foresee any approaching destruction of our planet in a similar manner. We might then have sufficient time to escape it. So now we ask you to explain, insofar as you are able, the forces that have laid waste your world, and destroyed the civilization that flowered here."

ONCE or twice during this oration the Shentolian had made as if to speak as his astonishment threatened to exceed his control, but then he grew calmer, and when Justicod finished, stared silently at them, turning to look at each in turn. They watched him eagerly.

"And do you of Aftwan," he finally asked, "not yet understand the nature of Shentol's catsastrophe?"

For a moment, none answered. Then Justicod spoke.

"I think I do," he said slowly.

The two stared silently at each other, alien, utterly different, yet reading in each other's bearing confirmation of their thoughts.

"Planetary suicide," concluded Justicod, his words falling deliberately in the tense silence. "You have destroyed yourselves."

For a moment, the Earthling faced the tones of accusation which the Martian could not keep from his voice, then he slowly bowed his head, turning the palms of his hands outward in a helpless gesture.

"It is true," he said. "We have destroyed ourselves. Set utterly at nothing the thousands of years of civilization's slow climb from savagery, the million years of striving upward from the beast. We have finally repudiated all of Man's nobility and intelligence, and in a last mad welter of maniacal

hatred, flung ourselves at each other's throats like the beasts we ultimately are. On the eve of a civilization that might have reached out to the stars themselves, we have flung life and the glory the future promised away from us as though it were of no account. The ape has finally triumphed."

"What—" interrupted ic Dalfca.

"War," continued the Shentolian, musingly. "Always has Earth known war. You of Mars have no word for it in your vocabulary. You cannot understand. You are all of one race; you have no nations nor the cursed, murder-breeding idea of nationalism—to kill men, your own species, with whom you have no quarrel, whom you don't even know. Always it has been so on Earth. First man against man, then tribe against tribe, and last nation against nation. The history of Earth is a history of warfare. Kings and conquerors, greedy for power, or covetous of material wealth, have drenched the pages of all Earthly histories with blood.

"Nations have fought for dominion over other nations, have stamped out whole races and invented all manner of horrible engines for the killing of citizens of other nations. They said, when civilization at last entered its highest phase, when kings and emporers were gone, that warfare had ended with one final World War that ended in our year One-thousand-nine-hundred-and-eighteen. They said it was a war to end war, but they forgot the financial kings and emperors. Wars have been profitable to them, and they have always fostered them. Some made vast fortunes by manufacturing the engines of war, and these men in particular have done their best to make wars, have nurtured race hatreds and national jealousies.

"Their callous, brutal greed has known no boundaries, their propaganda encircled the globe, and finally they incited two great races, the white who dwelt mostly in the Western hemisphere, inhabiting the continents of Europe and the Americans, and the yellow, who came from the East, from the vast continent of Asia, to fall upon each other in a war transcending anything we had known before, and involving every nation on Earth.

"They attacked each other with every weapon they could command—with explosives, with gas, and with disease. No form of death was too horrible or inhuman to be utilized, and all of the tremendous forces of our civilization were thus perverted to its destruction. Vast fortunes were piled up by the manufacturers of these weapons who sold their ghastly wares to both sides, sneering at the mania of patriotism which they themselves had created. Still they were too stupid and short-sighted to foresee that the monster they had made, that was devouring the world like a flame, would surely and inevitably engulf its authors as well.

"Merrily the holocaust tore along its mad path of destruction. The toll of Death became fantastic. Cities were wiped out in a night."

"We saw them," murmured ic Dalfca, awe-stricken, unconscious that he spoke.

"All business stopped," continued the Shentolian, deaf to the interruption. "Trade and transportation collapsed and world-wide famine walked with the other deaths. Then we discovered we had poisoned the air. The atmosphere of our planet, steeped in the gases we had loosed upon each other, was death to us.

"The war barons became frightened. Their own safety was threatened. They saw society sinking to extinction around them. And they tried to stop it. They refused to manufacture any more explosives. They destroyed what they had and killed the germs in the bacteria-shells. Wildly, in a panic of terror, they tried to stop it. But it was too late!

"The warring races laughed at their efforts. They had huge stores of weapons they could still draw on, and they were mad with the lust of murder, lost to reason or fear. The war went on to the end—till in a last Titanic burst of murder both races exterminated each other and Mankind sank back through the centuries to—to oblivion.

"You know the rest. You've seen the world; you've walked through our dead and desolate cities. This is the end of all human history. And I do not think the cosmos," concluded the Shentolian, speaking almost in a whisper, forgetful of his audience, "will see our like again."

A long silence ensued. The Martians stood quietly, lost in this tremendous tragic drama revealed to them. Then ic Dalfca spoke, softly, to himself.

"For five hundred years we watched them," he said. "The lights of cities we shall never see again. . . ."

EPILOGUE

THE Shentolian stood at a window and looked back at the Earth he was leaving.

A round ball, gleaming in the sunlight, except for the narrow scimitar of darkness that marked the edge of night, it floated quietly and seemingly without motion in empty space.

He, too, in the speeding space-ship, seemed motionless, and time had no meaning here in the still profundities of the eternal void. From here, Earth appeared the same as it had always been and gave no sign of the tragedy for which it had so recently been the stage. Only to the astronomer, ic Dalfca, did the unbroken darkness of Earth's night-side have a sad significance.

As the Shentolian stood gazing at Earth, he was presently joined by Justicod, who stood beside him, towering above the smaller Shentolian. Hesitantly, Justicod placed a hard paw on the other's shoulder. The Shentolian smiled his appreciation of the Martian's sympathy.

"And we came to help you," Justicod said sadly, "if it were in our power."

"You came too late," the Earthling replied. "I am the last man—the last man."

"Perhaps not," argued Justicod. "We have not explored all of your world. We have really seen but a little. There may be others living somewhere, somehow. Others may have escaped as you escaped. When we return again, we will stay longer. We will search everywhere, and you shall direct us to the remote islands and deserts where some may have lived on."

You will return again? asked the man, eagerly. You will go back to Earth and take me with you?

Of course, the Martian answered. And we will search till we find those who most certainly are still living, somewhere. You yourself must know of places we have not visited—places where men lived, which were remote and unlikely to have been much affected.

"Yes." The Shentolian was once more alert, his face bright with hope. "Yes. The islands of the South Pacific. Thousands and thousands of islands, many of them inhabited. Set in the ocean, thousands of miles from land, the atmosphere could not have been badly affected by poison gas, and only a few of the larger islands were attacked by the warring nations. Most were too small and isolated to be bothered about. Men must be still living on those islands, at least. I am sure of it!"

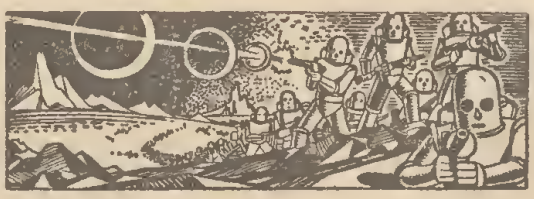
The change in the Shentolian was profound. He stood erect and stared once more back at the bright, Sun-reflecting, green globe of Earth, not sadly this time, but with hope and a dawning vision in his eyes. Justicod put an arm about the man's shoulders.

"I, too, am sure of it, said the Martian, "and we will go back again, and from that remnant together we will build a new, proud race of man that will again come into his ancient heritage, the green Earth. We of Mars will not let this new race forget the power, and intelligence, and glory that has been Man's. We will help our younger brothers until once again we see, through our telescopes, the night side of Earth blazing with the lights of many cities.

The Shentolian gripped the other's hand hard.

"You are good, he said."

Together the two stood and watched the green sphere as it slowly receded from them, slowly grew brighter as the scimitar of darkness slipped, prophetically, from its face.



COMING IN THE NEXT ISSUE

THE LOOT OF TIME

A Hall of Fame Novelet

By CLIFFORD D. SIMAK

The FISSION MAN

Perhaps they still knew him as Dr. John Norman—or possibly he was just Project X in somebody's file!

By R. W. STOCKHEKER

WRITHING in an eerie little dance, the dust devil spun across the concrete roof of the blockhouse. It bounced to the ground and came scurrying over the sand toward them, shattering its miniature fury finally on the wire fence which enclosed the building.

The fence had been high and bright and new the last time Roger Casey had seen it. Now it was choked with the debris of the desert, and the drifting sand had begun a slow climb to the barbed-wire top. A huge sign on the padlocked gate carried the red-lettered warning: "Danger! Radioactive!"

The sign was, Casey thought grimly, an epic of understatement. Four years ago he had seen the thing they had sealed in the blockhouse, and the short hairs on his neck still crawled when he thought about it. In four years you could forget a lot, or you could remember a lot, but the choice was not always yours.

He stirred uneasily, and his uneasiness seemed to reach out to the girl who stood beside him on the sand hummock. She pressed closer against him, a slender figure in brown slacks and borrowed field jacket. She had bound a silk scarf around her thick auburn hair, but the insistent, searching fingers of the wind had pulled loose stray wisps, whipping them into swirling red wraiths which seemed to mimic the wild dance of the dust devil.

Her eyes, fixed on the squat building, shaded into misty violet, and her fingers bit into Casey's arm.

"Roger!" she gasped. "How could they? How could they do it?"

"Try not to think about it, honey," Casey said. "It isn't something you can rationalize."

"I know, Roger," the girl persisted. "But it's so heartless."

Behind them footsteps crunched into the sand, setting up harsh islands of sound in the ceaseless hiss of the wind. An army officer, the flaming bomb of the ordnance on his collar, picked his way carefully up the hummock. He stopped in front of the girl, his shoulders bracing instinctively. She was a darling, Major Carlson thought. A man grew too old too fast. The difference between oak leaves and a lieutenant's bars just wasn't worth the gray hair.

"We're ready, Dr. Casey," he sighed.

CASEY hesitated, reluctant, now that the moment had come, to proceed. The whole thing was fantastic. It was hopeless; nothing could possibly come of it.

"All right, Major," he said. "We'll be right with you." He turned, helping the girl down the slope of the sand and into the cement dugout at the base of the hummock.

They had set a battered bench down there in the dugout. The bench now held a compact little amplifying unit. A squawk box stood beside the unit. Casey felt the muscles in his body stiffen as he crossed over to the bench. His arm was heavy and uncooperative when he reached up to flip the switch marked SEND.

The last jump was too great. They know that now. That uneasy and awful realization is something that scientists live and sleep and—sometimes—die with. Yet they are even now poised for further leaps beyond the barriers into the quiescent horrors that still wait for man in the Unknown.

The climax of that jump—Nagasaki and Hiroshima—is known to all the civilized world; the cost of the effort is hidden in top secret reports or buried, like Dr. John Norman, in the core of tons of reinforced concrete.

Roger Casey supposed they still called him John Norman, though it was possible he had become a number or a symbol by now—a Project X in the files of somebody's safe. . . .

The man on whom Casey's mind dwelt still thought of himself as John Norman, however. The mind patterns of a lifetime were, it seemed, tougher than the body cells. And in the bright sunlight he might, he supposed, still bear some faint resemblance to John Norman. But here in the blockhouse he was little more than an amorphous blot of phosphorescence—an animated X-ray with the bones showing through, white and blurred and the head a grimacing skull.

The blockhouse in which he lived—perhaps functioned would be a better term for it—was some nine by twelve feet in size. He often wondered by what process of reasoning they had decided on those measurements, or if that happened to be the standard size for tombs. He had plenty of time to think about that now.

He was not too uncomfortable. They had given him a mattress and a pile of army blankets. There was a chair and a small table. He used them, but he did not really need them.

There were no windows, of course, and the heavy door had been sealed by layers of lead. He received a supply of air through an aluminum pipe near the roof. An exhaust pipe in the floor drew out this air to be decontaminated somewhere, he imagined, out in that vast and somber wasteland. But he did not need the air either.

In the beginning, they had decided he would require food. So they had constructed an ingenious remote-controlled device, which was operated through a series of air locks. At first he had accepted the food. It had been a tangible link with a world that could no longer tolerate him. Then he had tired of it and destroyed the cart and the food con-

tainers as often as they had sent them in. Finally they had given it up.

John Norman had no clear recollections of how he came to be in the concrete cell. It must, he thought, have been a difficult job for them to get him here. He was aware of being lethal—incredibly lethal. And after that explosion at Alamogordo he had gone completely berserk. Of course they had worked it out, as, in time, they would work out all problems.

They had hunted him down with a kind of desperate fury. He still remembered the intermittment thuds of bullets in his body. They had tried to destroy him from the air, too, but he had managed to evade the bombs.

Now he wished that he had not, for he was beginning to be a little afraid of himself. There was a deadliness in him that matched the poisonous fission products of his body—a simmering, smoldering pool of hate.

The hatred was not logical. The incident had been quite unforeseeable; his isolation was a necessary safety measure. He realized that, too, but he was still helpless to combat it. This inadequacy hag-rode him through a nightmare succession of sudden frenzies. He had worn a hollow in the floor pacing back and forth during these outbreaks, his bare feet thudding ponderously on the cement, for his weight was tremendous.

Except for these periods of stress, he was usually quiet. He spent his time in endless experiments or in staring out, as he was doing now, through the concrete walls.

THE world that John Norman saw was a world that might have been created from an X-ray plate. It was a world where bone patterns wheeled in lazy flight through a dead blackness or crawled sinuously over the luminescent blur that was the ground.

Sometimes he stared at these moving bone patterns too long, and they were stilled forever. But he tried to be careful.

He was kneeling now, his head pressed against the the rear wall, a pose that had become characteristic with him, when the signal bell jangled out a sudden shrill warning. Once they had used this bell to notify him of the approach of the food conveyer, but he had not heard it for so long that the sound was almost like an unexpected blow.

He turned slowly, the blank eyeholes in the glowing skull studying the lead plate which covered the air lock. Then, still capable of being moved by a human curiosity, he climbed ponderously to his feet and crossed over to loosen the wing nuts holding the plate. He reached into the air lock and slid out a lead-covered, oblong box. There was a slender lead cable attached to the box.

The box must have been heavy, really heavy, but he handled it without appreciable effort, turning it around in his hands to examine it.

He lifted the lid, and almost dropped the apparatus when a muffled voice came crackling out.

"Dr. John Norman," the voice said. "Can you hear me, Dr. Norman?"

He glared down at the box until it began to fluoresce, then he hastily turned his eyes away.

"Dr. Norman," the voice went on, "if you can hear me, will you pelase call me back. This is Roger Casey. You remember me, Dr. Norman—Roger Casey."

Of course he remembered Roger Casey. One of the brighter young men at Alamogordo. A tall youngster, built like a football player, with curly blond hair and a flashing smile. He remembered Casey and he remembered the smile.

He crossed over to the table and set the box down. He closed the lid and began to speak carefully into the lead baffles. . . .

Roger Casey's hair was still blond, still curly, but the smile was not in evidence now. He stared at the grill in the squawk box as though it were possible somehow to follow visually the current into the blockhouse.

He could feel the girl trembling at his side. "Do you think he's still alive, Roger?" she asked. "That he can still—"

The squawk box sputtered into life, cutting her short. The voice that came out was metallic, without inflection. The words were spaced with a machinelike precision. "This is Dr. Norman, Roger," the voice said. "What is it?"

Casey drew in a long, slow breath. He had not believed they would receive an answer. He still could not believe it. He said, "Dr. Norman, I am calling you from just outside the blockhouse. But, before I go on, there is someone here who wishes to talk with you. Will you stand by?"

The girl stepped over, and Casey reached out a hand to steady her. She said, "Hello, Daddy. This is Susan."

There was a rather long pause. Then that flat, disembodied voice came back, still level,

still unmoved. "Hello, Susan. How are you?"

"I'm just fine, Daddy," Susan said. "Are you all right—in there?"

"All right is somewhat generic, Susan," Dr. Norman said. "But suppose we say that I am—all right."

Susan's eyes began to brim. "Oh, Daddy," she went on, her voice catching. "I've missed you so. They said you were dead. They told me—that—that—" She broke down then, unable to go on.

"Why don't you go on back to the staff car with Major Carlson, honey," Casey said gently. "You can try it again tomorrow. Maybe it's better if you don't hear any more."

He turned back to the squawk box. "This is Roger Casey again, Dr. Norman," he said. "Susan will be back again tomorrow."

"I understand, Roger."

"She's staying at a little town near here. It's called Las Cruces. . . Do you happen to know where you are, Dr. Norman? I mean, have you any ideas as to the geographical location of the blockhouse?"

"Only that it is in desert country, Roger, and that it is near a mountain range. My eyes are rather extraordinary, you know. I am able at times to get a beam of radiations through."

"Good Lord!" Casey exclaimed. "That might be dangerous for somebody."

"It might be deadly for somebody," Dr. Norman said. "But I try to be careful."

"Well—" Casey hesitated—"to get back to the geography—the mountains are the Organs, and you are on the White Sands Proving Ground in New Mexico. They've been experimenting with rockets here since 1945."

"What year are we in now, Roger?"

"This is May of 1949, Dr. Norman."

"I find it hard to realize it could have been that long, Roger. You say they have been experimenting with rockets here. That was one of your hobbies, wasn't it?"

"That's right. As a matter of fact, I have been recently placed in charge of the construction of a multi-staged, free-orbit rocket."

"A free-orbit rocket, Roger?"

"Yes. We are going to try to drive a rocket out beyond the earth's atmosphere. At a speed of some seven miles per second gravity and centrifugal force would balance each other, and the rocket would go into free flight out in space. It would continue to circle the earth once in every one and one half hours—a sort of man-made satellite."

"I imagine that overcoming the mechanical problems of such a rocket would be exceedingly difficult, but your greatest obstacle would be fuel. You would almost require a fissile material, wouldn't you, Roger?"

"Well, they made an attempt here in the latter part of '48 to send up a three-stage rocket using a conventional alcohol and liquid air drive. It failed to get free of the earth's gravitational pull. The rocket we are now working on will use alcohol and oxygen in the first stage, and a fissile type fuel for the laboratory head. The nuclear fuel was developed from your own notes. Which brings me nicely around to the reason for my contacting you.

"As you know, Dr. Norman, the greater portion of your notes was encoded. We were unable to decipher them in their entirety, and the fuel we developed from the line indicated by your experiments has not been always predictable. I thought you might be able to help us in this."

HE TRIED to make his voice sound eager, as though he really expected that this weird creature in the blockhouse could fit his thoughts again to a human pattern. But he had little hope. Science had gone forward too far since the physicist's entombment. A man could not step off a shooting star and then step back on again. Nuclear physics wasn't a merry-go-round.

There was a long pause this time, as though Dr. Norman was giving the idea his full consideration. He said finally, his voice giving the first faint indication of interest, "I believe I might be able to help you there, Roger."

"Fine," Casey said. At least, he thought, the scientist would be occupied again. Isolation from his work must have been harder to bear than separation from the world. "I have your notes here with me," he continued. "I'll have them sent in. Also, I'll see that you get some light."

"The light will not be necessary, Roger," Dr. Norman said. "I see easier now by radiation. The optic nerves appear to be able to act as a fluorescent screen."

"Oh," Casey said. The information disconcerted him for a moment. Listening to that calm voice, he kept forgetting the extent of the change which must have taken place in the man. He went on rather lamely, "Susan has received a Civil Service appointment and has been assigned to my department. She

will be able to come out here every day for any dictation you might wish to give. I am going back East for a consultation at the General Electric laboratories, but I shall be back in a week or so."

"About the fuel," Dr. Norman cut in. "If you can secure a lead container for me, I will send out a sample."

"A sample!" Casey exclaimed incredulously. "Do you mean that you have been able to create fissile material in there—without any equipment?"

"Why not, Roger? I am afraid you are not exactly cognizant of my possibilities. The world has been too ready to tag me a thing of horror—a dangerous freak, to be hidden behind locked doors. Yet I might have been of inestimable value to mankind."

"I am sorry about that, Dr. Norman," Casey said. "But you must understand that there was an appalling loss of life involved in your—your subjugation. And the blockhouse was to be only an emergency place of confinement. In the beginning they had expected your radioactive condition to cool off in a hurry. But this has not been the case. In fact, the counters have shown an increase."

"I am afraid I have upset many of the basic concepts of the radiobiologists," Dr. Norman said. "I was exposed to radiations of incalculable roentgens beyond the assumed lethal dosage, yet I am still, in a sense, alive. But if they are waiting for the radioactivity in me to die down, they are going to have rather a long wait. The 'half life' of plutonium, Roger, is 25,000 years."

"There is another disturbing factor involved here, Dr. Norman," Casey said. "We are beginning to wonder if the multiplication factor will hold at 1.00. There are some indications that it will not do this."

"So now the radiologists have scheduled me to go up with a big bang? Well, it is possible," Dr. Norman agreed. "I suppose I have become a sort of animated lattice pile, with the fissile particles in me moving ever closer together. But what do they suggest, Roger? That I drive cadmium rods into myself to retard the neutron transmission?"

"Hardly that, Dr. Norman."

"Perhaps an explosion would be the best solution to the problem of the isotopic physicist, Roger. I am afraid, however, that there is a more imminent danger. Long before that critical point is reached, I may have loosed a grim and fantastic nightmare of horror on the world that would be far more inimical than a mere explosion in an isolated corner in the desert.

"You see, Roger, I am beginning to develop symptoms of egomania, coupled with a disinclination to remain interred like an Egyptian mummy in a tomb. If you will send in some writing materials, I will endeavor to furnish you with full details regarding this. It is serious, Roger."

It was, Roger Casey thought, extremely serious. Two days later, on an eastbound C-47, he considered the import of the information Dr. Norman had given him. It was not a pleasant subject for contemplation, and it placed a heavy burden on a man already weighed down with his own problems. Casey decided he would have to complete his business with the greatest of dispatch.

AFTER the fiasco with the first experimental multi-staged rocket, the JRDB had decided to carry on the construction of the second of the satellite rockets without publicity and to release information about it only in the event of a successful launching.

Rocket technicians at Wendover and Point Mugu had collaborated on the assembly of the jet engine, and even among the general army personnel at White Sands there was no intimation that this was not just another rocket laboratory of the type they had been sending up since late in '48.

In the end Roger Casey was to be very thankful they had decided on this secrecy.

When Casey returned to White Sands he found a sealed envelope, addressed in Dr. Norman's bold handwriting and marked "Confidential," waiting for him. In the corner someone had added the notation, "Safe to handle." Casey read the contents of the letter with a great deal of perturbation.

Thereafter he pushed ahead the final assembly of the rocket as rapidly as possible. He found Dr. Norman's assistance invaluable here. The physicist appeared able to anticipate every contingency. It was like working with an electron calculator with reasoning faculties. Casey ceased to question the various changes in design offered by Dr. Norman, although some of them were inexplicable to him.

The strain on Casey was terrific. Nor did Susan's presence add to his peace of mind. She was completely enthralled with the whole business.

To her that metallic voice which came crackling out of the blockhouse was still the

voice of a tall, gray-haired man whose steady blue eyes were surrounded by little crinkly laughter lines. He was still her adored daddy who had told her fabulous stories and brought back exciting presents from his many trips. She appeared to have no real conception of his actual condition and seemed to feel they would soon be back together again and everything would then be all right.

Casey began to dread the necessity of facing her across the desk each day. Those big, violet-shadowed eyes were gradually taking on a slightly misty look both worshipful and proud. Casey shrank from thinking about what might happen to that look.

The knowledge of what lay ahead of them haunted his waking and his sleeping hours. It interfered with his ability to concentrate. It was unfortunate, but then love so often is. It was the sort of unknown factor which could turn even the most carefully controlled experiment into a roulette wheel spin.

In spite of all this, by the middle of July the project was far ahead of schedule. Casey began to relax, to feel that they still might make it. His optimism was to be short-lived.

It was at this time they found the first of the giant tarantulas. A guard killed it on patrol. It was enormous, over two feet across. The hairs on its body were like wire. It was highly radioactive—able to take its own picture on a photographic plate. Three more of the huge spiders were sighted in quick succession, and the Post Commandant ordered out a special MP patrol, equipped with protective clothing and masks.

A few days later a truck pinned down a huge rattlesnake lying in the road. It was almost as large as a python. They had literally to cut it to pieces with a machine gun to kill it. It, too, was highly radioactive.

Finding the snake was the final incident which decided Casey that the firing day had to be stepped up.

The night before firing day Casey slept in his office. At four in the morning the OD called him. "Dr. Casey," he said. "This is Lieutenant Marion, the OD. The wire enclosure around Station U-235 has been burned through. My orders are to report to you for instructions."

"Lieutenant," Casey said, "pull all your men out of that vicinity at once. This is vitally important. Who discovered the hole?"

"One of the guards, Dr. Casey."

"Did he go inside?"

"I believe so."

"Have him report to the hospital immediately," Casey ordered. "Also any others who have been inside or near the fence. How about yourself?"

"I went in to check the door on the blockhouse. It appeared to be closed, but it looked as though somebody had dragged a heavy object away from it."

"Better get over to the hospital as soon as you can. Don't wait to complete your tour of duty. Where are you now?"

"At the U-235 control station."

"Do they have a CQ or man on duty there all night?"

"That's right. Hold on and I'll call him."

Casey waited a few moments. A higher, slightly nervous voice came back to him. "This is Sergeant Morrison, sir."

"Sergeant," Casey said, "what about the charts?"

"Both the temperature and Geiger count are dropping fast, sir."

"That's all then, Sergeant. Thank you. Will you put the OD back on."

"This is Lieutenant Marion again, Dr. Casey," the OD said.

"Will you call the Provost Marshal's office, Lieutenant," Casey said. "Have them contact me before they take any further action."

FOR Casey there began a series of staccato phone calls and squawk box messages that followed without a break. By five o'clock the firing crews were beginning to pour into their stations. The MPs had blocked off the highway, and all the usual frantic bustle that precedes a rocket launching was in evidence, increased now by the news that something was wrong.

A pair of guards had been found unconscious at the base of the launching platform. The porthole in the rocket that had been left open for last minute instrument checks was closed. Casey had stopped a tech sergeant from climbing up to investigate just in time. After that he had all men cleared from the immediate firing area.

The red rim of the sun pushed into sight. It flushed the slender rocket, balanced on its fins, with a faint pinkish glow. It looked almost ethereal, as it stood there. It was slender and sleek—a spire from some far off space world.

Inside the command post the usual preflight tests moved ahead with clamorous but precise efficiency. Tension was thick. You

could, Casey thought, have bounced a billiard ball off it. He was conscious that he was being studied with a side-eyed furtiveness as he moved about.

He glanced at the clock and picked up a mike. "Stand by all stations," he said. "This is the command post. All of you know by now that this is another attempt to drive a rocket out into space. This rocket, as was the first of the satellite types, is a staged rocket. The first stage is the conventional alcohol and liquid oxygen drive. It will take the rocket up into the ionosphere. This is a safety measure, since the laboratory head is nuclear powered. The fission drive will then take over until the rocket is out into space.

"Most of you are aware that we have had some trouble here at the launching platform. It is true that a high degree of radioactivity has become apparent around the rocket, but I am certain that this will in no way affect the successful launching of the rocket . . . We have named the rocket *The Sati*—Goddess of the Sky."

He paused a moment to glance at the clock, then turned back to the mike.

"This is the command post," he said. "Stand by all stations. Stand by all stations. It is now coming up on X minus five minutes. X minus five minutes."

He felt the strain pouring out around him. He could sense the imponderable force of it slamming into taut muscles. He took up the count. "X minus four minutes . . . three minutes . . . two minutes . . . one minute, and the next count will be X minus twenty seconds."

Hushed expectancy made an icy pool in the room. All action hung suspended. Even the noise of the instruments seemed to be muted, to float back through a liquid stillness. He began the count of the seconds.

"It is now coming up on X minus twenty seconds . . . 18 . . . 14 . . . 10 . . ." The count went on, a mechanical hammer thudding in Casey's skull. Time seemed to stretch out into a blank infinity—to go on forever. ". . . 3 . . . 2 . . ."

It began with a smoky white wisp that slid down the fins of the rocket and bounced lazily on the launching platform. It began with fire that streaked the mist—and then suddenly all the blasting fury of hell was released in a mighty surge.

The rocket lifted with majestic disdain, bellowing with the insensate rage of a shrieking hurricane. It moved slowly at first, but picked up speed with incredible rapidity.

Casey wiped the perspiration off his upper lip. The rocket was gone now, and all Grand Coulee's horsepower couldn't bring it back again. It was gone, but it left a question that was to bother Casey ever after.

He knew that Dr. Norman had to exist. He had talked with him, had seen the graphs in the U-235 control room. But he also knew that an isotopic physicist was downright unconvincing.

Around him radio speakers clattered into life, grinding out routine position reports in steady monotones, broken once by the terse announcement, "She's free of the first stage!" And, much later, triumphantly, "She's out in space!"

That evening the newspapers screamed out the headlines of the successful launching of the first satellite rocket. Radar stations all over the world picked up *The Sati* and plotted its orbit.

For a few days the orbit-rocket was news and, for a few more, a topic of conversation and speculation. Then it was fitted neatly into the prosaic pattern of ordinary things, for Science keeps no miracles behind her. The strange and the marvelous can have their tenuous being only in the shadowy shapes of things to come.

IN various laboratories, throughout the following months, data sent back by the orbit-rocket began to amass. But there never was any hint that this information was other than telematic. The secret of the guarded radio, deep in the desert, that recorded a flat, metallic voice on wire—the first voice from space—was well kept.

On January 15, some six months after *The Sati* shrieked through the ionosphere and out into space, radio listeners heard the following newscast: "We are interrupting this program," the announcer said, "to bring you a news flash. A short time ago the satellite rocket launched by the Army at White Sands was seen to explode over the Pacific. Officials can offer no explanation."

Roger Casey, sitting with Susan in their apartment in Palo Alto, heard the newscast. Susan's lips dipped in a trembling bow of tragic roses, and she tugged forlornly at a red curl. Then, leaving Casey with the confused conviction that a fission man was still less inexplicable than a woman's intricate mental processes, she said:

"Anyway, it was a lovely funeral, Roger."

forbidden voyage

George Carlyle knew the way to get to the Moon—but the conscientious folk in authority did their best to block his path!

by RENE LaFAYETTE

INTRODUCTION: It would seem at this far distant time that the literature of Mankind, embellished as it is by thousands of great names, by trillions of books by title in the hundreds of millions of libraries throughout the width and depth of space, might still furnish some small volume which would give, in the human style of the acts themselves, a readable account of Man's Conquest of Space.

Today, sitting smugly on his thousands of planets, protected and served by a hundred millenniums of experience, Man takes history for granted and pays never a bow to those resounding names which composited his Destiny. And if he thinks of them at all, shuttling safely across a million light years of space, it is to dismiss them for it is so easy now.

But what high courage it must have taken for Man to launch his projects into the mystery of space, for he had no answer to a hundred million intricate problems, any one of which might well snuff out his life. What courage he showed and how dauntless must have been his spirit!

The first in a series on the Conquest of Space

Not that we lack vast tomes covering the past hundred millennia or that our children have not been made to study, at tremendous expenditure of switches, the basic history of our race. You can hear them chanting as they leave their schools a number of ditties which make them remember dates.

In Nineteen Hundred Eighty-One
Jonathan Bates Defied the Sun
And crying "Wait" to the distant Stars
Landed staunch on Planet Mars.

or:

"Sail on, sail on, and on and on,"
So spake Sir Timothy Wayne,
"We must reach Aldeboran
"Or never jet again."

And then we too must have chanted:

Aye rip the crown from off her side
Discard her plate by plate,
Forget her now that she is old
Abused and signed fourth-rate
But sirs, ye can't make Man forget
The Comet, Ship of Fate.

Ye can't make man forget the day
True Darryl sat her down
And made heroic history
Upon Far Lesia's Maun
Galaxy to galaxy sped
To make her high renown.

We chanted them and in the texts we saw their grim visages glaring at us—we conceded they were very great. But how much do we really know of Jonathan Bates or Sir Timothy Wayne or again Darryl and his famous *Comet,* which first spanned the vacuum between galaxies

It is all quite well to say that "There were giants in those days," or, "We have degenerated greatly from those times," and so excuse further expedition now that we have, in truth, conquered space. But it is to be feared that Jonathan Bates and Sir Timothy Wayne and Darryl and all the rest of that mighty crew were most amazingly mortal, even as you and I.

With little more than wit and courage, provided with the most Neolithic equipment, understanding almost nothing in any of the fields of science, these men yet dared to fling their frail bodies into the maw of waiting mystery and be damned to the consequences. Some succeeded, many died, yet the conquest of space continued to triumph over obstacle after obstacle, barrier after barrier.

From time to time it appeared to the stay-at-homes that the effort was so much folly. From the first, each time some new project into space was suggested, wise men of influence and money shook solemn and wise heads over this "irrational dreaming".

Each time some success was achieved the multitudes would applaud and then sit back into the complaisance that at last the ultimate was reached and the goal could be no higher. And yet Mankind found pioneers who did not mind the title of "crackpot" and explorers who acknowledged no "final horizon."

Yes, it is to be feared that we little enough appreciate the true difficulties or the breadth of the adventures of those heroes who were the vanguard in Man's Conquest of Space.

Sometimes they were not even appreciated in their own periods. Sometimes they were laughed down and hounded through the streets by pointing urchins who had been taught to say. "Crazy man, crazy man flew to the Moon. Ya, ya, yah!"

Man, from step to step, never did see that his salvation lay amongst the stars. In fact, before space exploration had begun, the greater number of people treated it as a subject of laughter and even those who should have known better thought that it was a far, far cry and would be of dubious benefit. It was into this incredible opacity that George Carlyle was born, on the Planet Terra—then called Earth.

Late in the twentieth century. . . .

* * * * *

THERE had come a war and like all other men of age George Carlyle had received a summons from his head of state which told him to be prompt, that a rifle was waiting for him and war won't wait.

Several million young men hastily obeyed. George Carlyle couldn't.

Now in those days, when individuality was hardly more than a catch word in political mouths, a man was damned if he went against the herd and his freedom of speech and action ended the instant he failed to imitate exactly what his state and people decreed. It needed more than one mutiny and revolt to assert such basic rights of man in their true essence. They had not happened in the days of George Carlyle.

Two military men came up to his home and rang the doorbell.

"Carlyle?" said one.

"Yes," said Carlyle.

"Do you have your draft card?"

"No," said Carlyle.

The two military men looked at each other. One of them, the swarthy one, grinned wickedly. "Are you crippled maybe?"

It was a jibe against Carlyle's build and health for, at the age of twenty-six, he stood six feet, if thin, and aside from the slight stoop and the way the blond hair was matted up in front of his eyes, he was very good to look upon. Space had not yet left its indelible print upon him.

"No," said George. "I'm busy."

"Let's go along quietly," said the swarthy one, "and talk it over with—"

"Can't," said George again. "I'm busy."

This was very amusing to the two military men. They won the argument by laying heavy hands on George Carlyle and taking him down to military police headquarters.

There the sergeant was not kind. He had an unaccountable desire for action, had the sergeant, and had been refused duty at the front. He was a very dried up sixty-one.

"Conshy?" said the sergeant.

"Beg pardon?" said Carlyle.

"You object to the war, I suppose," said the sergeant.

"Why yes, as a matter of fact I do," said Carlyle. "It is delaying me."

"Hmmm!" said the sergeant. "Too bad the belligerents aren't more considerate, sonny. Anybody'd think they'd have asked your permission before they chose this particular time to start a war."

This convulsed the swarthy one (he was trying to make corporal).

"Now suppose," said the sergeant, "you just come down here and walk around with us mortals long enough to tell us why you refuse to register."

"I don't refuse," said George. "I just haven't got time."

The captain had more luck. Probably the interview benefited by the speechless condition of the sergeant.

"Objector, eh?" said the captain. "History, please."

"I'm George Carlyle, aged twenty-six, born in Liona, a U. S. citizen, unmarried, graduated from State Tech as a physicist, living with my grandfather, who is my only surviving relative, and, if you please, sir, I'm very busy and may I go now?"

"Young man," said the captain, "this is a very grave thing. We could send you to a prison camp for years and years. What possible interest could any man place above the good of his country?"

"That all depends," said George, deciding to humor them.

"I suppose," said the captain severely, "that protecting your country against the enemy is not good?"

"Depends on how you look at it," said George. "You are entitled to your opinion of course, but I don't think war ever did anybody any good—individual men or the country either. I'd like very much to stay and discuss it with you, but really, gentlemen . . ."

They caught him at the door and pulled him back.

"One last chance!" said the captain, fringed with despair, "Will you or will you not serve your country in the armed forces?"

"Of course not," said George. "What on earth good would it do anybody to make a private out of me? I am trying desperately to get this thing done before everybody gets himself killed off and every minute I waste here—"

"Get what done?"

"My space-ship, of course," said George. "Grandfather Carlyle and I—"

They drowned him out with laughter. It was an unthinking, barbaric age. And at last even George realized it. He begged for a little time and he did not get it. He begged for a technician's status and he did not get that. The following day found him at Camp Wainwright being issued a rifle.

They tried to make him drill. He couldn't drill. They tried to take that stoop out of his shoulders. He wouldn't straighten. They tried to howl him down about his project and he wouldn't keep still.

A WEEK later he found himself doing fatigue duty in the administration building and the sight of a telephone on the absent C.O.'s desk gave him inspiration.

He sat down in the swivel chair and asked for long distance. When he had that he asked for the Navy Department. When he had that he asked for the officer in charge of missile design and production.

"This is General Lather at Camp Wainwright," said George. "We have a young technician here by the name of George Carlyle, who is probably the world's greatest authority on jet propulsion. He is waiting for orders and we wondered if you might be

able to use him. Carlyle is the name. George Carlyle."

The Navy thought a while. Very difficult and missile production was not, after all, the Bureau of Naval Personnel. Very irregular. If routine channels . . .

Carlyle went back to mopping the floor. Then another thought struck him. He took the typewriter in hand and wrote the War Department that Camp Wainwright had the world's greatest authority on jet propulsion who would be of inestimable service in a design lab. He mailed it.

When they let him out of the guardhouse the following month George Carlyle was almost reconciled to being a soldier. But not quite.

He had his eyes on the stars and the means to get there. But before this he would have to study how one gained a purchase on this mundane world.

Nine weeks later he was serving his country as a chauffeur to General Banks in Washington, D.C. They had assigned him to Chemical Warfare in view of his training and as a member of the Chemical Warfare unit —which nobody was sure how to use—he had tired of building roads and had levered himself into the transport unit.

He waited until Banks was mellow after a dinner at the Peruvian Embassy. As the general rode through the soft warm night he was much startled to hear his driver speak.

"What's that?" said Banks, thinking the soldier must have said they were out of gas or some such thing.

"I asked you," said George, "If it wouldn't be a fine thing if we were able to fly to the Moon?"

The general was very quiet.

"It is very simple, you see," said George. "By means of middle-range fission and enormous velocity (which cuts the required mass down very small, you see) a fellow could do it in the next couple months. It would only be an eight or nine day trip and I have a sphere already built and covered with asbestos which only lacks a steering mechanism to take off for the Moon."

George mistook silence for interest.

"You see, the way I figure," said George, driving with one hand and looking back half the time, "this war is pretty petty stuff. After all, why fight over this one small planet? There are countless planets out there. And fighting over this one is stupid. The thing to do is to go out and find some more. If all this effort being expanded on war were to go into the conquest of space, Man would really have something.

"Now the way I figure it, if I can just get off Earth and to the Moon and back, why everybody will see clearly that it's silly to fight about one planet and everybody will get down to the main business of colonizing other systems and doing something to be proud about. Compared to that this war isn't important at all. Silly in fact."

Which is why the transport sergeant was demoted and why George found himself back building roads.

Every week or so somebody would send around questionairres about special skills. Each time George had put down "Build a space-ship" but finally he grew cunning.

He pushed the matted hair out of his eyes, gnawed the eraser end of the pencil, eyed the paper and put down, "Explosives Expert. Adapter of Middle-Range Fission to Destroy Whole Cities Without Bombing. Former Member of the Communist Party."

This got action and George was taken off the roads. Intelligence people tried to question him while the F.B.I. went into a frenzy to trace him (F.B.I. meaning the counter-espionage bureau).

But all they got out of George Carlyle were formulas they couldn't unravel and laws of physics of which they had no record. And so they passed him along rapidly until his case file fell on the desk "For Information" of the organization in charge of all atomic energy.

Eight-thirty of a rainy morning found George facing a very solemn and extremely worried battery of scowls. The atomic energy people took their war bit seriously.

"Have you or have you not," said Lester, the chairman, "transmitted any information you possess to the enemy?"

"Well—" stalled George.

"How did you first become possessed of this information?" said Lester.

"I studied nuclear physics and the composition of matter at State Tech," said George brightly. "Middle-range fission—"

"Middle-range fission is strictly forbidden!" said Lester. "It is a national secret."

"I'm sorry," said George. "It said right there in the textbook—"

"How did you come by this information?" demanded Lester.

"Why, I studied it in school and I read

scientific magazines and all atomic energy developments are more or less well known. But what I wanted to see you about, gentlemen, is my ship."

"Hah!" they breathed as one. "A secret plane!"

"Nope," said George. "It is a space-ship."

"High altitude bomber," they said sagely to one another, "Satellite Observer. Guided missile from outer space."

"No," said George, "it's just a common space-ship."

"Common!" said Lester. "You mean there are others?"

"Well, no—maybe not," said George. "But we've known enough for a very long time to build one of these and seeing that it wasn't being done, what with everybody being interested in international politics, I thought it was about time to try. I haven't done anything new unless perhaps the assembly of several old things makes it new. But it's in my back yard at home and with about four days work—"

"What's the address?" demanded Lester.

"Probably false," said an F.B.I. guard, who was cuffed to George.

"One eighteen Pine Street, Liona," said George. Adding slyly, "It is deadly dangerous and anyone not knowing about it might blow up a big chunk of the state."

SO THEY took him out to Liona and they found the ship.

In truth, there was nothing extraordinary about the craft. It was a big pressure sphere made by the local foundry, covered with asbestos from the plumbing shop and tubed with common lead pipe. But it appeared very sinister to Lester and his people.

Grandfather Carlyle, who had been a nuclear physicist in his day, was very peevish at George.

"Where you been?" whined the old man, up to his elbows in a lightweight radar out of a wrecked airliner. "I've had to do half of what I've done all over, I've been so worried."

"I wrote," said George contritely.

"Oh, well—think of that. Guess I must have forgot to look in the mail box. But I didn't think you'd be gone more'n ten minutes. I got the water and oxygen licked, Georgie. But you'll just have—Hello? Who are all these gentlemen?" George introduced them.

"Well think of that," said Grandfather Carlyle, wiping off his hands on a piece of cotton shirting. "In my day it was as much as a man's life was worth to even whisper Atomic Energy Commission and here you are. Well, welcome. Look her over if you've a mind. I'll have the maid fix us up a little Scotch."

"Arrest that man also," said Lester to the F.B.I. "Now, young man, what is so dangerous here so that we can move this thing away?"

"Oho," said Grandfather Carlyle. "Under arrest, hey. Just like old times back in the war of the forties. I remember—"

"Never mind that," said Lester. "Fix this thing so it won't explode."

George winked unseen. "It took two months to build the fuel into her and trigger it. It will take me several days to get it out. Grandfather, restore her equipment so she can be moved all in one piece and I'll go to work on her fuel supply."

Now this was very odd because her fuel supply was not even aboard. But Grandfather Carlyle had served under Security in his day and he went back to the radar, working very fast.

Lester and the others wandered about and understood little of what was going on, for the last requirement of their job was an understanding of elementary nuclear physics. Impatiently they at last gave over to the F.B.I. (which knew even less than the Commission) and departed for a hotel.

George Carlyle sighed deeply and began to move in the blocks of unstabilized lead which was the ship's fuel supply. Having no gamma rays in its explosion, it made a very good fuel, requiring only the precipitation of its component energy parts to blast quite merrily.

F.B.I. sat around, too near to permit conversation until George said to them, "Be careful of radiation. No telling what it might do." They watched him after that from across the yard.

"Check it carefully, Grandfather. Soon as you say the word, off I go."

"You think it's safe, Georgie? By golly, these fellows mean business. Just like old times. I remember at Los Alamos—"

"Remember that we won't get another chance once she's launched," said George. "Be careful."

They were very careful. They rigged up a gyro-wheel with a heat motor attached to

the inside of the jet tubes and by which the whole sphere could be kicked clumsily about in space. They fixed the radar so that it would magnify and track dangerous particles in space to the end of avoiding them.

They built in a pair of forceps so things could be picked up without exiting from the ship and they threw in an old Air Force stratosphere suit. Disguised as shielding they put aboard iron rations and the gypsum which would supply water.

Lester came to inspect three times. He didn't get a chance on the fourth to see the ship. It was gone.

Grandfather Carlyle and George had said their good-bys inside, the old man very wistful, for he'd dreamed of this most of his life. Then Grandfather Carlyle had taken a deep breath and plunged outside shouting, *"Run!* Run for your lives! She's about to explode! *Run!"*

The F.B.I. needed no further hint. They passed the old man on the way down the drive and when they heard a roar behind them they were certain they had been too slow. It took them about half an hour to realize that the scorched spot contained no fragments of ship.

It took them longer to find out they'd lost Grandfather Carlyle. The fire department came and put out the blaze which had been smoldering in Mrs. Cassidy's chicken coop and, when it was gone, the F.B.I. and the commission agreed that there was no further use staying here.

Meantime George, for all the layers of sponge rubber, was nearly blacked out. He weighted seven times his normal and, try as he could, it was impossible to pick up his arm and cut down the inexorable chewing of unstabilized lead. It took fifteen minutes for one bar to wear itself out and, at the end of that time, the ports were already black. Earth gravity got hold of him and the weight diminished.

He looked out the port at a distinct curvature and was immensely gratified. He rocked the gyroscope until he had the tubes pointing away from his target and, looking up through the top port to find out when, thrust in another rod.

He was somewhat astonished to find the air bumpy after a bit, for there must be precious little of it up here. And then he realized that proximity rockets were trying hard to reach him. George did not know who had detected him on what screen or whether the rockets belonged to friend or foe. He was seven g's heavy and he couldn't have changed it.

Glad to find himself alive and on course, he chose a much smaller rod and fed that. Three gravities were still uncomfortable enough. But three gravities must be and he sat on his rubber cushions and ate the apple his grandfather had given him and watched the Moon.

George found out, in the unmarked days which followed, that the running of a spaceship is not a one-man task. He finally abandoned the watch on the radar screen as too tiring. He lay full length, stomach flat against the mats to ease it, and one by one fed the rods to the hungry tubes.

He would sleep until the lightness of his body warned him, he would awake and replace the rod and sleep once more. Or he would sit and look through the lead panes at the sun and Earth and try to realize that he was actually in space. It did him no good, for he was much too busy and too tired with strain.

He marked the days by the growth of his beard, looking at his reflection in a lead pane and fingering his chin. And still he did not know how long it was.

He forgot to awaken at last and only eight hours sound slumber brought him around to dead tubes, empty air flasks, meteors diving madly across his radar screen AND THE MOON AS BIG AS EARTH RIGHT BELOW.

He almost killed himself breaking, so swift had the Moon's gravity made the fall, and blood was in his mouth when he finally eased the ship, with a soundless jar into the pumice dust of Luna.

CRATERS fell away from him, mountains loomed sharp and incredibly lonely above him. George sat there, wiping out his mouth so that he could eat a cheese sandwich in the comfort of motionlessness.

He did things which were very sane. One look out of his eye at that landscape told him that this was to be the greatest single danger of exploration in space—loss of sanity.

He didn't try to take down any description of the place. He noted the shadow of Tycho close by so that he would have the time. He snapped as many pictures as he could from the ports and then thought about getting out.

With the forceps he felt of the pumice. The way the ship was lying in it, it must be very deep. It would take extremely large snowshoes to walk here. But he had to do it just to say he had set foot on the Moon.

He put on the old Air Force suit and inflated it. He checked his gypsum and carefully covered his oxygen supply. He put his food in a tight locker so that it would not explode. And then he opened the port and let himself out.

When the air had stopped rushing by from the ship, he dared let go. He sank almost to his waist in pumice. It scared him.

He looked at this immense, ghastly world where no sound had ever sounded, where no foot had ever trod, a world without storms, without rain. A world in which any living thing would perish if unguarded for an instant.

He was in the twilight zone but the cold of the shadow bit.

The harsh mountains stared down, etched in blinding brilliance against the coal-black sky. The plains reached out from his plateau.

Suddenly he was scared. He began to tremble and he wanted to yell. He floundered backwards through the pumice and grabbed the open port. He overreached in this slight gravity and struck his fish bowl helmet. It steadied him, the noise of it.

George turned and scooped up pumice and put it in a box. He concentrated and told himself he had to do it. Finally he got out and bucked the ship over until the tubes were straight down. His heat dial on the suit was on full and he was shivering with cold.

But he had to do it.

Leaving the port open, he fed little scraps of unstabilized lead into the tube. The ship jumped and bobbed in bad control about five hundred feet off the surface of the Moon. When he was over a basalt ledge on the side of Tycho, he eased down once more.

A shudder of the ground unnerved him as he started to get out. A giant plume of pumice had risen into the air, up, lazily up and then oh so slowly down. A huge meteor had landed about a half a mile away.

George took a cinch on his nerve and stumbled out on the basalt. Tycho gaped hideously, larger than his eye could encompass. It was suddenly hot, frying hot and he hugged a shadow to be instantly cold.

One by one he picked up rocks and made a cairn and when he had it done, he scrawled, with stiff gloves and a dull pencil on a piece of cheese box:

George Carlyle
June, 19—
Landed
and
Took Off for Earth

He weighted it down with a stone on top of the cairn. No wind or rain would weather it. It would be there forever—unless a meteor came.

It was a solemn moment. He looked at the pock-marked waste and spread his arms wide. "Conquered!" he said.

George Carlyle had little rest returning. He would fall nine-tenths of the way without power, though he had much more fuel than he needed, and he was afraid he would fall too fast to stop.

The fear was almost realized but, when it was prevented, another danger came. He could watch the Earth turn and as it turned he grew frightened at the hugeness of the oceans. How easy it would be to fall into them and vanish! And so he lazied back, waiting for Earth to turn and give him North America.

The gravity was hard to balance. The tubes kept slipping out from straight down and the gyro had to be in constant use. Worn out he was glad to make as good a landing as he did, in the middle of a plowed field but so hard that the tubes crumpled.

THE farmer came out with a shotgun while his wife phoned the army that the enemy had finally fired an atom bomb and George tumbled forth to his welcome.

He breathed the air and he looked at the land. The sky was blue and the trees were green.

"All right, you," said the farmer. "We been warned about spies and secret weapons. Stay right where you are."

"Don't ever let it go," said George, a little hysterical from lack of sleep. "Life. You've no idea how it changes a place. Air—wonderful!"

And so the Army came and took him away and in Washington, D.C. he and Grandfather Carlyle, hunted down at last, took a solemn reprimand from the energy people.

"For there is no telling," said Lester, "whether or not you did go to the enemy in this craft and give them our mobilization secrets. In this grave national emergency,

when the loyalty of every man must be established beyond question . . ."

"They ain't changed a bit," whispered Grandfather Carlyle. "In my day they—but look here, Georgie, did you plant it?"

"A big cairn," whispered George. "A note in the top of it on the bottom edge of Tycho. You bet I did! But, Grandfather, why won't they listen? It's so awful easy. If I could get to the reporters with these pictures—"

"Now stop fretting," whispered Grandfather Carlyle.

"But they won't listen to me. They won't look at my evidence. And they wouldn't let me keep any of it."

Grandfather Carlyle nudged him to silence and indicated Lester.

For the Honorable Stephen P. Lester, high among the high, power of powers, still spoke.

". . . so that Man may be free to work in peace and harmony upon this planet. It is then the studied opinion of this council that while you have done wrong in seeking to escape us, the better course is to permit you to have the honor of returning to your duties in your former unit and organization. For this nation needs every man who can carry a rifle. Nothing more will be said. You may leave."

Nothing more was said. Not for many, many years, when a ship piloted by Jonathan Bates, who was "flying to the Moon on Man's maiden voyage" (as the papers said), saw tracks imperishably preserved near Tycho and, landing there, found the cairn.

George Carlyle
June, 19—
Landed
and
Took Off for Earth

It made news for a day and the papers ran it as a mystery in the supplements and then forgot it. For the only George Carlyle of record had, almost of the same date, been killed in action.

THE ETHER VIBRATES

(Continued from page 10)

chines, journey back to an England of 70,000 years ago to do a spot of ancient big-game hunting.

There they enjoy fun and game until a one-eyed Neanderthal native whom they have befriended brings them a magnificent cut diamond in gratitude for their gifts and favors. He then leads them to a cave in which is stored a tremendous cache of jewels and precious metals, all beautifully worked and all obviously anachronisms in the world of 68,000 B. C.

How the stones got there and the resulting contest for their possession are the elements of action and suspense that make THE LOOT OF TIME a story which deserves another day in print. It is swift and sure and belongs with the great science fiction yarns of years ago.

Other novelets and short stories will be culled from a star-studded list of authors that includes Ray Bradbury, Jack Vance, Bill Temple, Rene LaFayette, Blair Reed, Noel Loomis and William Stockhecker. And Ye Edde will be back with his burblings, blithe or otherwise, in the three departments, THE ETHER VIBRATES, THE SCIENCE FICTION BOOK SHELF and THE REVIEW OF THE SCIENCE FICTION FAN PUBLICATIONS.

All in all, March will be an issue we like. Our fondest hope is that you will agree with us.

ETHERGRAMS

FAN Raymond J. Van Houton has recently asked us to call to your attention the existence of The Fantasy Veterans Association, of which he is temporary secretary. He urges all stfan-vets to write Temporary Commander James V. Taurasi, 101-02 Northern Boulevard, Corona, Long Island, New York, for application blanks of other information concerning the new Association.

It sounds like an interesting idea—although there is always the possibility that such a setup may deprive science fiction followers of sorely needed homogeneity by separating one whole group of followers of the fantastic from those who did not get into uniform. We choose to reserve decision and

leave the rest up to you.

Now, for the letters. Of late—and it is partly our fault for not applying the editorial shears when and where needed promptly enough—many contributors have been teeing off on each other, writing long columns of answers to all the letters in the previous issue. It's been getting mighty dull, mighty dull, for all those not concerned with the japery.

So, from here on, such pen-pal stuff is out in these pages. We are looking for ideas from readers, not merely story criticism and private jokes. Those that come up with them get the accolade of an Editorial blade or buss (depending upon the writer's gender, naturally)—those that fail to emerge with at least the slim germ of an idea get the basket. Selah.

Meanwhile we are opening the letter bazaar with a truly remarkable epistle, to wit—

WE'RE GRATEFUL TOO
by Russell ("Rusty") Doss

Dear Sir: This week I read my first "thick" book and, thanks to your amazing magazine, STARTLING, I enjoyed my first.

My mother told me that I was getting to an age where I should read more "educational" magazines. So, with anger in my head, and coins in my pocket, I tossed my comic away and headed uptown. I moodily walked in the first magazine store I chanced upon, tossed some change on the counter, and asked for a Western.

But they were sold out on Westerns and, by pure chance, I saw the book with a girl on the front and a hideous looking thing eyeing her, from another planet. I saw the September issue of STARTLING.

Why not—it looked interesting, and it probably would be educational, if it was about things like space travel. So I took it. Twenty minutes later I was in a new world. My mind was whirling. Such words a Mekka-Betty-Keith-many universes-and Dopelle were whirling through my mind, for I was reading WHAT MAD UNIVERSE. This story was so interesting I can't explain it.

The thoughts—the fiction—the drama and the way the story was explained. I don't know how much Mr. Brown made from that story, but he should have made more. I am 12 years old, and I understood every piece of that story. The same with THE RAT RACE, SHENADUN, etc., etc. However, I didn't get interested in "ETHER VIBRATES."

Excuse me while I finish burning my comics.—*609 North 5th Street, Lafayette, Indiana.*

Well, goody for you, Rusty! It's nice to know we've made at least one convert, and it is our hope that you enjoy a lot more issues of SS and its companion magazine, THRILLING WONDER STORIES.

Write us again and let us know.

OH-OH!
by R. L. Farnsworth

Gentlemen: I should like to point out a typographical error in my article "First Target in Space" in your September issue. On page 99, line 5, it should be *minus* 80° C. I think that you have a fine opportunity as a science fiction mag and if you will trim your pages, get Bonestell to do some astronomical covers, keep getting authors like Van Vogt, and avoid repetitious plots (like "plurality of worlds"; a purely philosophical concept) you will certainly go places!—*Glen Ellyn, Illinois.*

Okay, we're sorry but our edges stay untrimmed. Don't ask us why, they just do. Frankly we've been having a tough time getting our authors off the plurality of worlds theme. Apparently it goes to their heads like Chateau Yquem or at any rate a couple of glasses of cooking sherry. Who's Bonestell?

SNIFFING THE BUNG
by H. T. McAdams

Dear Editor: I am taking you up on your editorially expressed invitation for thoughts and ideas relevant to science fiction. Please excuse me for getting to the meat of the problem without the customary salutatory flourishes of the more experienced fen.

When I ponder the infinite inventiveness of mathematics, I wonder at the sterility of ideas in science fiction.

"There are more things in heaven and earth, Horatio,
Than are dreamt of in your philosophy."

Commendations are therefore due such efforts as those of Margaret St. Clair in her "Aleph Sub one." The fact remains, however, that science fiction has not even begun to tap the rich winekeg of mathematics; it has only sniffed a bit at the bung.

Scientists are in general convinced that every physical event can be reduced to a mathematical formula. What about the converse? Would it be presuming too much to believe that all mathematics, however abstract, has a physical interpretation?

How often has mathematics outstripped physical science! Imaginary numbers have long since ceased to be imaginary, and the geometry of Lobachevsky has recently been applied to a theory of visual perception. This does not mean to say that science fiction should read like a calculus textbook—that is expressly *verboten*—but the ideas implied in certain of the more abstract phases of mathematics might well be injected into science fiction to yield surprising and novel results. In this way the bare bones of mathematics might

". . . suffer a sea-change
Into something rich and strange."

Am I too vague? Do you clamor for something more specific? Consider this:

Science fiction has done its share of toying with finite and infinite universes, but what has it done with the dual concepts of bounded and unbounded universes? Oh, no, they're *not* the same! And we've had dimensional phantasies galore, but how many get beyond the rather hackneyed concept of time as the fourth dimension?

After all, the fourth dimension doesn't *have* to be time. The concept of dimension is strictly an outgrowth of the theory of combinations applied to point sets (this I can prove) and *any* equation in four unknowns represents a four-dimensional situation, even if those unknowns are only nuts and raisins.

Again, space has been warped to H— and back, but what has science fiction had to say about the invariants, those properties which remain unchanged regardless of any distortion short of cutting or tearing? All of which brings me to my main thesis: the topological (non-metric) aspects of mathematics remain a virgin field for science fiction.

Concerned as it is with problems removed in space and time from the *Here and Now*, science fiction often finds itself ensnarled in the discussion of "alien cultures." Wonderful ingenuity is directed toward the creation of beings which are physically alien *par excellence*, but mental traits are pretty generally lost sight of in the mad rat-race to produce bigger and better Bems.

Whether they be animated ant-hills or supermen,

such beings all too often retain strictly human logic and strictly human emotions. Such departures as are made are usually only incidental; they do not represent emotions and ways of thinking which are topologically different from those in our Terran frame of reference.

If this seems vague, may I suggest that it is not inconceivable for some beings to be perfectly at home with a transfinite number system and yet be completely ignorant of what someone has appropriately dubbed "the wonderful wonders of 1, 2, 3.?" If metrics and topologies are dual concepts, as there is good reason to expect, what is to prevent the development of a culture whose logic is based upon analytical topology rather than upon analytical geometry of the Cartesian type?

It is a pet theory of mine that any function can be represented as a topological configuration of points as well as by a space curve. Ergo, as G. O. Smith would say, the question "How far is it from the Mare Imbrium to the Crater of Copernicus?" might be completely unintelligible to a Lunan, who would consider the problem in terms of topological manifolds and point sets. I think that Bob Williams might just possibly have been hinting at something like this in "The Seekers," with his *teleket,* "the awareness of the pattern of things."

It is difficult to know to what extent the failure to think boldly is associated with subconscious inhibitions. There is just a chance, however, that revolutionary ideas may more readily sneak past that little man whom the psychologists call the "Censor" if these ideas are camouflaged in abstract mathematical symbols unintelligible to the conscious mind.

But since your inhibitions are not necessarily my inhibitions, you may be able to interpret my mathematical nightmare as a very real, but very fantastic, dream. One man's meat and all that sort of thing.

So if any of you fans have any ideas along this line, let me hear from you. We might be able to accumulate enough material to support a fanzine devoted to the cause. How about it?—*564 Logan Street, Bethalto, Illinois.*

Though tempted, thanks to our ignorance of higher math, to lapse into a frammis-on-the-portestan flipness, we refrain. Mr. McAdams' idea of how aliens might be treated with the accent on systems of numbers, points or old garter belts is one of the most stimulating we have ever received.

Furthermore, it deals directly with one of our pet peeves—the inability of most authors to grasp any concept of "alien-ness." Leinster came close some years ago in his DE PROFUNDIS but offhand we cannot think of another successful science fiction story which stressed such a creature.

Perhaps, since you marshal ideas deftly and write with some authority, Mr. McAdams, you might care to expound your ideas on the treatment of aliens in a full-fledged article. If you do, please give us first crack at it. We aren't kidding and this is an honest invitation.

Handled correctly it should be a dilly as well as a spur and guide to certain of our writers, who shall be nameless for the nonce.

A BIG BOOT
by Chad Oliver

Dear Editor: The publication of Fredric Brown's *What Mad Universe* in the September SS strikes yours truly as being of a significance at least equal to the invention of the atomic bomb and fire. Even in the glorious early days when SS was printing yarns of the quality of Weinbaum's *The Black Flame,* Williamson's *The Fortress of Utopia,* Binder's *Five Steps to Tomorrow,* and Wellman's *Twice in Time,* I doubt that a story so unique as the Brown tale could have seen the light of print. Its emergence now adds emphasis to the notion that both SS and TWS have broadened and expanded their editoral fields—for the better, I hasten to add.

I really got a kick out of *What Mad Universe,* and not just because my letter was the key to the whole story. Gad, no—perish the thought and boil it in oil! I particularly enjoyed the episode in which the BEM asked the hero for a match—not to mention the hilarious take-off on fan science in the sewing-machine episode. I kinda thought that maybe Brown had slipped up toward the end and would find himself with an extra hero on his hands, but he took care of that very nicely. My sincere compliments to Fredric Brown—may he wave in triumph forever.

The Hall of Famer by Miller is a good example of a paradox from the Good Old Daze—the beautiful writing of a corny story. Now, very often, it's the other way around. Still, *Tetrahedra of Space* was hokay. MacDonald shows great promise in *Shenadun*—I wish that he had ended it some other way; the radionepisode didn't seem to harmonize very well with the rest of the story. *Rat Race* had a nice idea, and Vance would do infinitely better if he would forget about space pirates, the curse of science fiction.

Zounds, that Bergey cover. I can dream up screwier BEMs than that cold sober.—*Joe Doppelberg, Harper Star Route, Kerrville, Texas.*

Okay Joe—Chad. You don't leave us much to say. We are in hearty concurrence with your ESP (etheric space pirates) ideas but like the SHORTCUT so well we bought it anyway. We liked that sewing machine too. It reminds us of an odd episode which occurred during the preparation for the printer of the Fred Brown opus.

In sweating out the inside blurb atop pages 12-13 we finally came up with a honey that had just enough letters to fit. It looked swell till we read it aloud.

THE WORLD OF DOPELLE IS A FABULOUS PLACE
WHERE MEN IN JALOPIES ARE MASTERS OF SPACE!

Came the horrid dawn. We had written a comic rhyming couplet where suspense, drama, scope, peril and perhaps a couple of aspirin tablets were indicated. So, regretfully, changes were made and the lovely lilt went out of it. Contrary to popular belief, editing isn't *all* fun.

OUR NON-SKID AUTHORS
by George Freeman

Dear Editor: Allow me to compliment you on the general excellence of your last few issues. Particularly your latest issue of SS. The story, WHAT MAD UNIVERSE, added a fresh note to the somewhat run of the mill stories concerning space travel, warfare and the like, using a new approach to a somewhat overworked theme. It had that touch of humor and satire that I consider so necessary to good STF. The reference to one Joe Doppelberg was strangely reminiscent of the old hack letter days.

While on the subject of the past, I was comparing some of my old issues of SS and TWS with the latest few issues. The stories have improved remarkably . . . though on the whole authors of these have not changed a great deal. What ho, an editorial

shakeup? And a glance through readers' sections, old and new, revealed an even more surprising fact. . . . Isn't it amazing how some of the old tried and true fans suddenly learned how to compose a comprehensive letter? One might call it the renaissance, a remarkable revival of learning.

I like the brisk note you have achieved by the addition of new authors to your retinue. A new author every issue. A few more additions like Ray Bradbury would make your mags peerless in the STF field. He, Ray Bradbury, was always a first rate weird and fantasy writer, (so I have it from Chad Oliver) and now shows great promise as a STFiction writer. More of Bradbury.

Anent this Kuttner-Merritt controversy . . . Who's Merritt? (no offense, please) For my money, Kuttner stands ahead.

With regards TEV; I read, and in some cases enjoyed the readers comments . . . i.e. As far back as I can remember, the cover artist has stood the brunt of the readers' wrath. Bergey in particular. Fans, lay off him, he's not such a bad fellow even though his pics are sometimes overdone. You still buy the mag, don't you?—*826 Avenue H North, Saskatoon, Saskatchewan.*

Editorial policy in regard to stories has changed considerably, especially in the last five years. Stories that were once of standby type are no longer accepted and many yarns which would have been considered over the heads of most of our readers are now bought whenever they seem to have sufficient merit. The trend has been away from blood and thunder and space opera, toward a somewhat (we hope) more adult level. We'll run pseudo-science as heavy as any of the rest of the field today.

The authors who have hung on through this transition are all first rate craftsmen, who know their stuff and how to produce it. Just about all we have to do is tell them what we want. As for the fans whose letters have improved—well, methinks they've been growing up too, some of them.

P.S. Thanks for the defense of Bergey—even though he really doesn't need it. He is actually a highly imperturbable gent with a small grey mustache and a large sense of humor. Maybe he needs it at that.

FAERIE QUEEN
by Frances Schneider

Dear Ed: I shall not enter the Kuttner-Merritt feud. Both authors turn out excellent work and I have nothing new to add to the old arguments. However, although it may anger some of your fans, I would like to discuss Lovecraft, particularly his writing in what has been called his horror-Cthulhu-Mythas mood.

Lovecraft seems to be a perfect craftsman, his stories are almost above reproach on that point, but I am completely repelled by the pathological nature of these stories, by his obscene digging for the last festered flaw of the once normal and human. Good horror stories may be written without sinking to the abominable depths which Lovecraft uses to obtain his effect.

I shall probably be thought a light-minded fool who likes fairy tales. Well, I do like them but I can also enjoy a good horror story when it isn't of the Lovecraft variety—when the story can make your flesh crawl without playing upon repulsion at odious abnormality. I fail to understand the type of personality which revels in the Loveeraft stench of decadence.

Leave Lovecraft and let us take up the September issue. The longer TEV section is extremely welcome, particularly as it was the only really good thing this time. WHAT MAD UNIVERSE had several good moments but on the whole it was a far cry from the exceptionally good story I had expected. RAT RACE also had an amusing ending but it moved slowly. SHENADUN had a good idea but it wasn't developed. TETRAHEDRA was up to the other stories, which seems to suggest that the whole issue was rather mediocre. You can do much better than this.—*2509 Clifton Avenue, Cincinnati, Ohio.*

Well, praise Allah, you seem to be in a minority on both counts, Frances.

RED OF PUSS
by Peter John Ridley

Oh, most illustrious one,
Oh, father of all editors,
Oh, oracle of wisdom, Greetings,

Is my physiognomy crimson? There ought to be a law compelling artists to sign their work. Have just finished the September SS. I'm glad to see you running an article. Hope it becomes a habit.

Regarding the literary line-up—

TETRAHEDRA OF SPACE, an easy first, a real *science* fiction yarn.

WHAT MAD UNIVERSE, a good fantasy.

SANATORIS SHORT CUT. best of the shorts.

RAT RACE and SHENADUN, not so hot.

Here's hoping the editorial dignity has recovered enough from "My Dear Chappie" to appreciate the heading of this epistle. Comments on your artwork are noticeable by their absence (sardonic laughter).—*268 Well Hall Road, Eltham, London, S.E. 9, England.*

All is forgiven, Peter. For those who missed the occasion upon which Mr. Ridley's rubricity of countenance is based, he praised a Finlay illustration in the May issue which was actually the work of Vern Stephens. The "My Dear Chappie" business is self-explanatory.

RICH AND SPARKLING
by Wilkie Conner

Dear Editor: *What Mad Universe* is, I believe, one of the most unusual novels SS has ever published. It is rich in satire, filled with sparkling humor. Only an stf editor or an author well versed in the mechanics of stf could have written such an unusual masterpiece. This novel really indicates to just what extent stf can go. Every known form of literature has its niche within the bonds of this great literary form.

Your typography and interior artwork continue to improve. Keep on improving and you'll be the slickest pulp on the stands—if, indeed, you aren't already! Just think how impressive those luxurious Finlays would look on machined paper—how a dash of color would set-off the whole thing. Ah, yes, I am afraid I am still a dreamer.

"Astra" Zimmer slings a mean pencil. I always look forward to reading her letters.—*Box 2392, West Gastonia, N. Carolina.*

Miss Zimmer seems to be lamentably among the missing this time around, Wailkie. And now, to balance your fulsome appreciation, a beef from another quarter.

SABOTAGE
by Wally Weber

Dear Shmo: Just returned from the wilds of Quincy

where I sabotaged the wheat crop. By working with a hacksaw on strategic parts of the harvesters it was possible for me to gain enough free time to enable my perusual of the SSS (September *Startling Stories*) to occur. In a couple of days the Ritzvillites will start in on the golden grain and once again the curse of manual labor will have me in its grimy grip. Perhaps, if the OTWS arrives in time, it will be necessary to renew my nefarious activities; otherwise, nought remains but toil—or something.

But on with the boring details of the September '48 version of your putrid pulp. What madness has taken possession of your limited mental machinery that you utterly disregard my suggestion that you abolish your letter section and, instead, actually *enlarge* the revolting sludge-department! Sir, (the term is loosely used) thou art fallen into the heathen tentacles of Ghu from which none escape and few survive. Gad, goon, take heed of the words authored by Agee Jr. of Virginia and cease this folly or suffer the unbearable consequence: i.e., letters from Wigodsky and LeRoy.

Incidentally, since it was brought up in your comment on Schaver's letter, what is this "Weber & Fields fiasco" all about? I'll even meet you halfway and look up the meaning of *fiasco* myself.

Fredric Brown's "Astonishing Complete Novel" left me with an irksome query; how about the Keith Winton who already lived in the universe Keith Winton ended up in. I should think that he would object to somebody walking in and taking over the chain of magazines that he had spent his entire life building up.

Another query: IN WHAT WAY DOES THE COVER ILLUSTRATE THE NOVEL????? and? Now come clean, you didn't mean it did you? There must be a simple explanation—a blind man in the art department; a drunken fan on a visit; a dero in the press—anything to prove it wasn't intentional. I'll believe practically anything but that.

Try to imagine the September cover without the girl on it and you see one of the best stf covers since the August '43 TWS. Just try it once and see if you don't. Without the dame, it looks as if the monster was reaching for *you.—Box No. 858, Ritzville, Washington.*

Well, with the wheat all winnowed or whatever is done to it, you should be reclining on your—er—shoulder-blades, Wally, taking life easy until time for the next Big Haircut rolls around. Quincy, Illinois, eh? Isn't that the home town of Fritz Ostermueller, the veteran Pirate left hander?

There's an amusing yarn about him. Last summer, after pitching a night game against the Cards, Fritz, who is in his forties, got permission to go home and visit his family. The plane stewardess spotted his name, came over to him with one of those winning smiles and said, "Oh, Mr. Ostermueller, I'm so glad you're with us. You must have come to St. Louis to see your son pitch."

Well, back to stf and Weber. You seem to read TEV, whatever the length, which is all we ask. As for Weber and Fields—well, for many decades they were the leading comedy team of American music halls, vaudeville and whatever. Weber has long since been dead but Lew Fields, we believe, is still alive. He did his last acting, as himself, with Fred Astaire-Ginger Rogers in that Vernon-and Irene-Castle movie they did.

You bloomered on the Keith Winton problem, Wally. Naturally, the Keith Winton of our hero's ultimate world in WHAT MAD UNIVERSE had been liquidated by the moon-rocket. Our Keith simply stepped into his shoes, the lucky dog.

YATATA YATATA
by Neil Graham

I have just finished the September SS and, of course, TEV. Such a lot of people all talking at once! So I might as well add my two cents worth.

SHENADUN was good. WHAT MAD UNIVERSE—hmmm. Editor, Surprising Stories. Say, wait a minute, could Ye Ed have written this one? No? Yes? SANATORIS SHORTCUT was fair. RAT RACE was poor and the HoF "classic" (I don't think!) was awful. While on the subject of the HoF I nominate AFTER THE ATOM, (SS, May, 1948) for 1958.

This is the place to say something witty but 'pon my soul, I can't think of anything to say. So I'll say good-bye.—*R. R. No. 4, Mitchell, Ontario, Canada.*

Ye Edde is not Fredric Brown under his own or any other name. Sorry.

TENSTRIKE
by Linda Bowles

Dear Editor: Well, wotta ya know! Bergey put out a fairly good cover this ish. Mind you, I said *fairly* good. I've seen some good covers by him but it's sure been a long, long time.

For the benefit of one of the readers who asked the fans to rate the stories, I shall proceed to do so. Bartender, set up free drinks for the authors. A small glass of warm beer for the worst stories, a chilled glass of wine for the good and a tall, icy mint julep for the best.

WHAT MAD UNIVERSE—one julep for Mr. Brown. And make up two more for John and Dorothy, who gave us RAT RACE.

TETRAHEDRA OF SPACE earns for Mr. Miller a small glass of warm beer.

SHENADUN was well written. What shall we give Mr. MacDonald? How about a glass of the best sherry in the house? Okay?

Now comes Mr. Vance's SANATORIS SHORT CUT. For him, only the best is good enough. You may have the nick of the house, sir. Here's to ya! I'll stick to something milder myself. Say, soda pop.

THE ETHER VIBRATES—indeed it does. Now, if you'll excuse me, I think I'll go scout up an ice-cold orange ade. This Kansas heat is getting me down.—*931 North Jackson, Topeka, Kansas.*

Okay, Linda. We're cutting down on straight criticism letters but we heartily approve your rating system. More.

VLOOT, VLIET
by D. Carter ("Doc") Hoyt

Dear Sir: I doubt that any fair-minded person will "jump on" Mr. Clark after reading his letter in the September issue of STARTLING STORIES. He has set forth an observation that is well-thought-out and clearly prefaced by considerable personal observation. He raises several points that I would like to discuss.

The first of these is found in the lead novel of STARTLING, namely one JOE DOPPELBERG. Here is the fan, who because of youth or fixation at an immature level of development, finds in STF (to borrow a term) a dream-world. Here for him is a place where ugly reality does not encroach upon ideals or aspirations. Here "right will out" and the hero will inevitably gain the heroine. Too, there is the appeal for the incurable idealist who cannot or will not face the truth.

The second point, that STF is more widely divorced from reality than other types of fiction, is a too-

broadly-drawn generalization. One has only to go to the "popular novel" of today with its oversexed and subliterate characters cavorting in a "Romantic" setting, to see that here too is a playground for the frustrated or repressed.

Thirdly, that writers of Science-Fiction or Fantasy set forth their stories merely to please the childish or neurotic impulses of one segment of their readers, is not to be considered. They do write so as to reach the lowest common denominator of the group that reads their offerings. This is the well-known practise of "slanting," whether for the "slicks" or the "pulps." Lurid covers are another commercial appeal to the mean, hence their use.

The fourth point concerns science as a panacea. Since some readers' connection with science is only within the pages of STF magazines, and a great many others (including many writers) know only a smattering, science, *in itself* has assumed a position of omnipotence. It is a reaction akin to that of the primitive to a medicine-man.

Lastly, "escape" reading. My own enjoyment of literature comes from the ideas presented there. If the work happens to fall into the "escape" category, so what? So long as one is not an emotional deviate, "escape" reading is good for the mind. After all, the mind as well as the stomach cannot be fed on an inflexible diet.

To answer Mrs. Firestone's letter, scientists *have* discovered a star with a satellite. It is a binary and has a single planet. Location and names escape me.

The January issue marks the tenth anniversary of STARTLING STORIES, but no tumult or shouting—why? I think that you are to be congratulated on ten years of service to the field of imaginative literature. I have been with you from the beginning, and I hope to continue the pleasant association as long as possible. Today, STARTLING STORIES is the best of its field; may it ever be so.—*403 Second Avenue, Watervliet, New York.*

Thanks for the pleasant conclusion to a thoughtful and extremely interesting letter, Doc. We'll do our utmost to keep things on an interesting and entertaining level between covers. For comment on our first ten years, see the last (November) issue. We prefer to confine the tumult and the shouting to the stories and to TEV, where they belong.

Your previous points are well taken and find us in hearty concurrence right down the line. In fact, if you have been following our editorials here and in our companion, TWS, you'll have long known this.

As for slanting, we consider it one of the banes of our existence. Whenever we receive a story, from author or agent, introduced by a note which states that the enclosed literature (?) has been prepared especially with ourselves in mind, we approach it with all of the reluctant delicacy employed by a luckless Army specialist engaged in disarming a time-bomb.

All too often the darned thing explodes in a lurid burst of adjectives—right in our seamed and pitted face. We wish those who write for us only to do the best they possibly can, leaving the slanting up to us.

ONE BIG SITTING
by Al Gillboord

Dear Editor: It has been quite some time now since I last penned a letter to STARTLING STORIES. Years, in fact. Then what, you wonder, is remedying this deplorable situation. And, quick as a flash, I reply, "The September issue and Fredric Brown's WHAT MAD UNIVERSE."

Boss-man, this novel I read at one sitting, which is something else I have not done in years. Brown has a mighty fine style of writing—smooth, easy—so that one is hardly aware of actually reading. I liked the hero being a science-fiction editor. It struck me as original, since I can't off-hand recall ever having read any other stf yarn with that idea. More from Mr. Brown, please.

As for the interior illustrations, I have no complaints about those for the lead novel. My favorite is the one on page nineteen. I can't comment on the remaining stories and for an excellent reason. I haven't yet read 'em.

One thing more—many thanks for the too-short article by R. L. Farnsworth. Like the fading song it was "good, good, good."—*Toronto, Ontario.*

Thanks for getting up sufficient interest and energy to write us, Al. And please don't wait quite so long before an encore.

FANUNIVERSE
by Arthur H. Rapp

Dear Editor: Ah been gettin' lazy of late; effen twarn't fer Roscoe, muh pet beaver, ah'd never get a letter writ to yo-all atall.

Now that I'm at it, I might as well tell you I enjoyed WHAT MAD UNIVERSE more than any tale in any stfzine for years. The main appeal of Brown's story was its unpredictability—who ever heard of a lead novel of interstellar war where the heroine wasn't kidnaped by the alien race?

There was only one flaw in Fredric Brown's basic concept—and that is his assumption that in a stfan's ideal unlverse the fan would be the world-ruling genius. Among non-fan readers of stf, yes. But Editor, after all these years you should realize that in a *stfan's* ideal universe, the principal change would be that everyone would regard stf as the highest type of literature, that all mags, pulps, slick and otherwise, would be full of it! Ah, well, we can't blame Brown. Anyone would get confused, trying to depict an author's conception of an editor's conception of a fan's conception of an ideal universe.

As for the rest of the mag, RAT RACE was either too subtle for me, or else I'm justified in feeling that nothing in the story gave a hint of the non-carnivorousness of the Cafis, until the climax. This left a feeling similar to that of a detective story where the solution depends on clues which are kept from the reader.

Stf has changed too much since TETRAHEDRA OF SPACE was written. The style was stiff, the characters mechanical and, personally, I didn't care a great deal whether the crystal-creatures were defeated or not.

SHENADUN was well-characterized and smoothly-written. It's a pity the giants-in-the-earth theme has been given distracting connotations in stf.

SANATORIS SHORT CUT was amusing in a corny sort of way. It seems to me, though, that, given the factors of curved space and faster-than-light speed, Acco May could have circumnavigated the Universe after he learned of Magnus Ridolph's scheme. By the theory of relativity, such a voyage would give the same effect as the oft-discussed time machine, and thus May could take measures to forestall his enemy.—*2120 Bay Street, Saginaw, Michigan.*

Your fan's dream world is oddly reminiscent of Burl Ives' "Rock Candy Mountain." Pardon a personal question but does your beaver have or is he—a beard?

HAIR-AND-TAFFY PULL
by Benjamin Birnbaum

Dear Ed: I have a reasonable idea to propose. Most Stf fans are looking forward to the advent of space travel, correct? Ergo, they have kept abreast of the

current developments in this phase of research, and presumably know what they are talking about. Of course, since these aforesaid developments are common knowledge, they can afford a very good thought basis for ideas and discussion.

This, therefore, is what I propose—to have a come-one-come-all forum in this column, upon the developments and possibilities of space travel, with anyone at liberty to contribute his treasured ideas, to be hashed over and torn apart by the other correspondents to this august mag. After all, scientists are not the only ones that get ideas! Such often-argued-but-never-settled topics as space warfare, space pirates (perish the thought), etc., could be settled once and for all.

Life on other planets, although we don't know a damn (oops—darn) thing about it and probably won't until space travel actually *is* developed, can also be rehashed. And this would also serve an academic purpose, for it would bring less informed readers up to date about just what's going on in the wide, wide world of space travel. (Aside to the editor; it might also bring a good many more readers to the magazine.)

For serious fans, the forum would be a good place to let off steam and for the less-serious-minded, it would be a heckuva lotta fun. Of course, too much wisecracking would ruin it, but there's plenty of room for some wit. There would have to be some, for if there weren't it would be as dry as dust, and just about as worthless.

However, if some of the too-corny letter-hacks were either eliminated or made to put some meat into their letters, this column could turn into something really worthy. However much the opinions of some readers are of value to the editor, and however much their evaluations of the stories are worth, the vast majority of the readers are not interested in any evaluations excepting their own, but merely in the other correspondents' style of writing.

Let's leave style to the story-writers—it's their bread and butter—and concentrate on something better. I'm not saying to eliminate evaluation altogether from the letters; on the contrary, it's valuable to the editor, for it shows the trend of public, or at least readers', opinion, but the whole column does not have to be devoted to it. There's room for something else! I'm not saying that the column should be devoid of style; style is the spice of a letter; but it should not be overdone. Moderation's the thing!

It is not our custom to run letters without the address of the sender but since it is probably our fault that the accompanying envelope with return address was lost and Mr. Birnbaum's idea has merit, we're running this one anyway.

To a certain extent (though not as much as we wish) these columns already constitute a forum of the nature he proposes. We remember a recent controversy that lasted for some issues as to the type of armament effective on space-ships. And there is a current something stirring about extra-Solar Solar systems. There have been, of course, many more and they will recur with increasing frequency in the future.

But the idea of cutting down on story comparisons is sound—in fact, we have already expressed similar sentiments. Such comparisons, like story criticisms, are worth while only if the epistleer has something of pertinence and interest to say. Too few do. They merely like or dislike in varying degrees of acerbity or praise.

Anybody got any ideas for a hot breeze-session?

HOPEFUL PLEA
by Mrs. Helen Hough

Dear Editor: As this letter contains a hopeful plea, I would greatly appreciate your printing it. Somehow I seem to have missed the July issue and I wonder if any of you readers happen to have a spare copy I could buy. I'll answer all letters even if I can't find the magazine.

Your stories give a wonderful lift and a welcome relief from the routine of housekeeping. It's a minor tragedy to me to miss even one issue.

The September stories were grand as usual, especially the lead novel. Wouldn't it be swell if we could fling ourselves into an Utopian universe? Hm—let's see now—fur coats, Cadillacs—guess I'd settle for a sensible place where the papers print something besides war and threats of war.

If you think a gentleman (?) named Clements might object to another feminine reader's name in TEV, just print the first paragraph. I hate to bother people who resent me. Some of the ladies seem to have answered him quite adequately.—*517 East Main Street, Peru, Indiana.*

Clements too is among the missing this time. Perhaps the telling off he got put a permanent crimp in his misogynism. Or perhaps not.

RUN OF THE MILLER
by Fred Ross Burgess

Dear Mr. Startling: Received your latest issue today through courtesy of my local newsdealer and my own dough. Therefore tonight, or rather at 3:00 in the mawning—you know; nothing could be finah than to be at Carolina in de mawning—I sit here in my office and write concerning lo these many wonderful and startling things which you have placed before me. Gershwin's *American in Paris* is a big help, but it is wearing to run back and forth, typing two words and then changing a record.

Notcherly when I bowt the magazine I looked through the *Etheral Vibrations* to see whether or not I had remembered to mail that last letter to you. Evidently I didn't. Tch. But I did happen to glimpse Bobson "Wil" Tucker's messle and laughed. Hah!

As I usually do, I therefore read the short stories, then the novelets, then the novel. Here's my ratings on the current crop, based on the Burgess system, an amazong and complocated arrangement for determining the relative value of the works. Uncannily, it happened to agree with my choice. *Voici:*

Place:	*Rating:*	*Story:*	*Author:*
1.	0.640	*What Mad Universe*	Brown
2.	0.475	"Sanatoris Short-Cut"	Vance
3.	0.390	"Rat Race"	de Courcys
4.	0.105	"Shenadun"	MacDonald
5.	0.060	"Tetrahedra of Space"	Miller

Incidentally, while we're at it, the perfect story, if such could be written, would receive a rating of 1.000; in the same light, no matter how bad a story is—be it merely a collection of letters in no sequence—it cannot receive a rating of less than 0.020.

As a story, which it wasn't, but I thought it would be fun, Farnsworth's *First Target in Space* pulled down a measly little 0.247½, which would seem, as they've run in the past few issues, to make it a Hall of Fame classic in about 1960.

The drawings, slightly run-of-the-mill, weren't too bad. That isn't saying much, though. Best thing in—or on—the book, was the delightful sketch of the Lunan on the cover.

Now a short discussion period. There was no reason that the "Burton" effect would have sent Winton back to his universe. No reason at all, other than the fact that it gave the story a slap-happy ending. That alone was responsible for a good 0.050 points on the ratings.

I particularly enjoyed Jack Vance's little epic because I have a special like for stories concerning the games of—hum—chance. The story was a lot too short, tho. It would have been much better had it been something like 10,000 or 15,000 words.

The others barely need mentioning. Therefore, I'll barely not mention them.

Letters were decidedly run-of-the-mill. The only truly outstanding entry into the field was Tucker's missage, as I said earlier. And therefore, having noth-

ing more to say, I refrain from further comment.—*—c/o Graham Memorial, University of North Carolina, Chapel Hill, North Carolina.*

The run-of-the-mill to you too, Ross. And the Burton effect did *not* send Winton back to his own universe—he did a lot better in the one he found.

SNAILBACK DELIVERY
by K. F. Slater, Esq.

Dear Editor: Gettouta that chair quick, and get crackin'. I have my largest size atom bomb trained on Suite 1400. And not only is this an atom bomb, it has attachments of my devising, which are even worse! As it crosses a coast line on its way inland, it releases hordes of BEM. Little purple-eyed, pink-skinned, blue-nosed octopoid ones, 3 inches high. Not physically dangerous, but, brother, think of the psychological factor attached to one of those when it comes into view just as you raise the glass to put back the 'one for the road'!! The only word which fits is 'CATASTROPHIC'!

You wanna know why? Well, so I get a pat on the head, per Sept 48 issue. But do I get reviewed, do I! Wasappened to the March O.F., No. 3? Airmailed to you in March . . . cost me a buck. Wasappened to No. 4, June? Also airmailed . . . 'nother buck.?????? And that's not all. Your correspondence must be delivered by tortoise. Joyce and I got married in March (24th). And Ron Holmes knew muyo pronto. But in SEPTEMBER (well, I know it's really July) you give stale gen. And the address!! South DRINK! Ghu have mercy on the lead weight that passes for your soul! Itsa B for Brink. You had it right in my letters before.

The lead novel has it well and truly. WHAT MAD UNIVERSE, indeed. When did you get translated, Mr. Editor? And having read that far through the mag., I got so upset that I hadda bash off this letter before I could get down to reading any more, even tho 'HALASUHTEM' Wigodsky and 'ASTRA' Zimmer glorify the pages of the ETHER VIBRATES. And I have therefore postponed the pleasure of reading the rag—sorry, mag, until I can cool down enough to appreciate it. Therefore in a few days, yet another letter will be on the way to you. A more pleasant epistle, I hope, if the rapid glances I have managed to give to other bits of the mag convey anything to me.

Seems that I have concentrated all my venom in a half page of this AL, and as it costs a tanner whether I send it fully covered with type, or only half covered, I might as well fill it up. I appreciate your sentiments about us poor starving (STFarvation) Britons, and to help, would you publicize that I am willing to swop British books for subs to USA mags. ANY B.Books. Fantasy, SF, Educational, mystery, detective, psychic research, etc. Any subject. I don't want subs for myself, I've got those taped, but I do need them for other UK fen. Hordes of 'em, and there are more being born every minute, if my social reporter advises me correctly.

Next O.F. 'General Chuntering' is gonna read like the B.,M,&D. column of a newspaper, I fear. As to what I can offer, latest include a reprint of Wheatley's famous 'THEY FOUND ATLANTIS,' and new books include Farjeon's 'DEATH OF A WORLD' which starts off with interplanetary adventurers who stumble on Earth just after World War III, and try to save some remnant of humanity; then two on the atomic power-mad scientist theme, Eden Phillpots' 'FALL OF THE HOUSE OF HERON,' and Laurence Kirk's 'THE GALE OF THE WORLD'; another interplanetary Pelham Groom's PURPLE TWILIGHT. Average price for these will be about $2.10, including postage. Anyone who wants to get these—or any others—is invited to write to me, or to Joe Baker, 1438 Addison Street, Chicago 15, or John Koestner, 2124 Rene Ct., Brooklyn 27.

And since I wrote the above I've taken a look thru S.S., and I found yet another error. Nothing to do with me, but, dear Ed, you are leading young girls astray. Marion Miller, to be exact. Of course there is a sequel to the MOON POOL. Merritt also wrote 'CONQUEST OF THE MOON POOL,' and any fan-dealer can probably advise you where to get a copy.—*13 Gp. R.P.C., BA.O.R. 5, c/o G.P.O. England, or Riverside, South Brink, Wisbech, Cambs, England.*

Whew! You really teed off on that one, Kenneth, Esq. Or on us. What's this O.F. anyway? Who's Joyce (congratulations)? What's a B, M & D column? We remain enthralled, puzzled and potentially atomized.

Seriously, Ken, we'll do our best to correct such omissions in the future. As to the Moon Pool sequel, we really took it, as the last (November) issue will reveal. One more like the above and we'll pat your head with a baseball—pardon—a cricket bat. Though a Number One wood has its uses too. Flatter trajectory and all that.

CLMDUFS
by T. E. Watkins

Dear Editor: A great big bouquet of roses to Fredric Brown for "What Mad Universe" in the Sept. ish. of SS. It is the best *wish* story of the year! I wish it were true. Say, maybe it is true, who am I to doubt? At any rate, it is a regular can't-lay-magazine-down-until-finished-special, a *CLMDUFS*.

And since this is the best wish story of the year, why not wish. I'm coming in for a crack-up with the ship from Arcturus and I'm thinking about the probability universe that I want to land in. A blinding flash and "Watkins Special Heaven" opens up before me.

Meat would be 10c a pound. There would be plenty of meat. SS would be a weekly. There would be plenty of houses. TWS would be a weekly. There would be plenty of robots to do all the work. SS and TWS would be loaded with CLMDUFS. All the women would look like Finley's babes. Boy, would I fix things up. Anyone who doesn't like it can wish for his own universe.

Next best story was "Sanatoris Short-Cut" by Jack Vance. Smooth writing and an interesting character in Magnus Ridolph. Best thing in the story was that super pinball game, or should I say, waterball game. Glad we don't have any of those around—I wouldn't have a buck. I'm an old pinball champ. Record is 34 free games built up with NO SHOVIN', fellows! I am strictly a free roll man. Would have preferred Ridolph busting Acco May's alibi, rather than using that navigation trick to catch him.

You say, but that was the point of the story, that was the S.F. That may be, but with all the space travel in evidence in the story (they seemed to be a long way from the solar system) it seems far fetched that no one had figured out the fastest method of navigation.

Next best was "Tetrahedra of Space," by P. Schuyler Miller. Here we have a real old-fashioned "menace" story with all the angles. I love 'em!

CONTENTS

1. A National Geographic magazine for background.
2. A hero. He must be brave.
3. A scientist, any old kind, to make with the stf shop jargon.
4. A menace, something evil, but not too hideous. We don't want to scare the kids.
5. A sheep. Someone to get bumped off to show how tough the menace is.
6. A gimmick. Something to get rid of the menace.

LIGHTS, CAMERA, ACTION, and we do mean *action!* Hero, scientist and sheep run across a menace in some faraway locality. Menace looks unstoppable. Scientist bides time. Sheep gets excited and runs or attacks menace barehanded or, better yet, sells out hero and scientist and gets himself bumped. Anyway, he gets his. Earth doomed! Hero takes over. Gets self in an impossible jam. Things look black. Scientist sees flaw in menace. Mutters shop jargon. Hero catches on—moves in—menace folds. Whew! I love 'em. This story was a CLMDUFS!

"Rat Race" by D. and J. de Courcy had the best gimmick of the year. Not as well written as some of the others, but the gimmick was tops, a beat-up old piece of meat. And the menace was one of the best. Don't let anyone say that the idea isn't logical. The Indian Nabobs of the last century created great armies complete with elephants that they moved about in a vast chess game. When a prince got himself surrounded, he quit. No one got hurt. Clive, the English-

man, came in with a handful of men who were willing to shoot and they took the whole shebang, elephants and all!

"Shenadun" by John D. MacDonald was better when the hero was going up the mountain than when he was coming down. Giants did not have enough menace for me. Finlay's giant babe was nice. Story was well written.

"The First Target in Space" by Farnsworth was full of information about the moon that I didn't know. The lights in the craters and the appearance and disappearance of structures on the surface of the moon suggest that Joe Doppelberg's purple BEMS do exist. And who is Joe D.? See "What Mad Universe." Joe's moon had air on it as well as purple BEMS.

Best story in either mag, SS or TWS, from Jan to Sept was "The Earth Men," by Ray Bradbury in August TWS. Next best so far was "What Mad Universe." Next best was "The House of Rising Winds" by Frank Belknap Long. Treatment alone gets "Winds" its top spot, but the idea of a hunter looking over the human race for zoo specimens is tops. I know a couple of guys I'd like to sell out. The hunter would have some nice vicious specimens for himself too.

Worst story of the year—I don't pick worst stories. I only pick best stories. Will send ten-best list at the end of the year. Boys will have to go some to top three I have already picked. Thanks.—*1605 Wood Ave., Kansas City, Kansas.*

Nice going, T. E. No particular comment for us. But if the sheep in your formula doesn't get nicely toasted, where do the lamb chops come from? We ought to send you a pinball machine that always comes within one small fraction of paying off. It should keep you occupied for a decade or six.

HIPPY
by Tom Jewett

Editor: Hip, hip, hooray, for *What Mad Universe!* Hip, hip, hooray, for Fredric Brown and *Startling Stories!* And a special hip-hip to Bergey's femme on the cover of the September issue. Lovely, *lovely!* And even the BEM was better than usual. Three and-a-half cheers, too, for the expanding of SS and its sister stfantasy publication, *Thrilling Wonder Stories.*

Fredric Brown's *What Mad Universe* was one of the best SS novels I've ever had the pleasure of reading. It was so far above Hamilton's novel in the July number that the difference is really appalling. Yes it is. Hamilton seems to try to set the scene complete in the very first paragraph of any chapter, and in prose that makes even me blink my eyes in disbelief. But Mister Brown does it smoothly, as it should be done. Shouldn't it?

The plot also was good. Seems to me it wasn't brand-new, but I'm really glad it didn't all turn out to be a dream, as the very first illustration suggested. Stevens' pics were wonderful. He doesn't equal good old Virgil Finlay, unfortunately, but the page eleven and page nineteen illustrations are the best. Especially the page eleven. . . .

Of the short stories MacDonald's *Shenadun* took top honors and that Finlay pic was wonderful! That guy can really draw!

Jack Vance's character, Magnus Ridolph, seems to be shaping up pretty well, but dragging in that Mercator projection error was corny. After all, if it's as inaccurate as all that it wouldn't be used in space navigation where the gravitic fields of the planets play not a small part in planet-hopping. I must say, though, that Mister Vance did a wonderful job of padding that gimmick into a good short story.

The de Courcy story was poor. I've seen similar themes done much better by others.

You may hunch up your stooped little shoulders now for I'm going to talk about *Startling's* pet flop, the Hall of Fame department. Mister Editor, you don't seem to realize that we readers aren't interested in the stories of ten-twenty-thirty years ago. We want modern authors who are at the peak of their writing career *now.* I don't have to list the best stfantasy authors who appear in *Startling* and *TWS* because you, I and everyone else knows them. And because we know them we want to read stories by them.

Henry Kuttner at his best is unequaled by any author of one-two-three decades ago and I'd match many of today's well-known stfantasy authors against the hacksters of years ago. I shudder at your statement that because of more space to be available you plan to run longer Hall of Fame stories. I don't want to read stories by authors of eras gone by, I want to read stories by authors that I like and whose style is familiar to me and who entertain me with good stories that please me.

I'll eradicate the guy that says P. Schuyler Miller writes better than Ray Bradbury. And I'll decimate the moron who claims Merritt outwrites Jack Williamson. The stfantasy writers of today have the styles of writing that we the readers like to read. If they didn't they wouldn't have readers.

Styles of writing have undergone changes, that you'll have to admit. Subtle changes, yes, that I can't possibly put my finger on. But the changes are there and we're sensitive to them, even if we can't define them. In the final analysis it comes down to this: we want to read modern stories with modern styles and techniques, not introvertive essays with the Gothic style. In ten years the whole technique of stfantasy writing may change as readers tastes ebb and flow. But until then, let's have a truly modern *Startling Stories* with no reversion to the so-called "classics". How about it?—*670 George Street, Clyde, Ohio.*

It seems to us that one of the chief virtues of the HoF is that it enables such discerning readers as yourself, Mr. Jewett, to study the advance of stf over recent years. That such an advance has occurred we would be the last to deny.

So don't blow a gasket if we continue to publish such stories as we feel contain some modicum of modern reader interest or reveal, by comparison with today's stories, some stage of the progress of stf. Publishing such stories should incite more interest than annoyance from true afficionadoes.

CONJUGAL BLISS
by Ruth Herman

Dear Sir: My husband and I are avid readers of your magazine, but are not subscribers. We buy SS from our local newsstand. I have seen your reprints of fantastic stories of long ago and without a doubt I would like to see a reprint (it may have to be in serial form as it is quite long) of a book called "Darkness and Dawn" by Edward Allan England.

My brother has a print of this book and should you not be able to locate a copy I'm sure that he would oblige in lending you his copy.—*1495 Popham Avenue, The Bronx 53, New York.*

Thanks, Mrs. Herman, for your very kind offer Unfortunately the length of Mr. England's excellent novel is a decisive factor against its republication in our pages. Serials are definitely not included in our current policy. Sorry.

PICK UP STYX
by Clifford Dye

Dear Editor: So you've read John Kendrick Bangs' A HOUSEBOAT ON THE STYX. Well, well! 'Tis one of the too-few humorous fantasies that I really love. I seem to be the only one around here who has read it, and it's awful not to be able to discuss a good story with someone who has read it.

Remember the after-dinner discussion in which Baron Munchausen tells of killing the row of ducks with a pearl and George Washington is asked his opinion of the truth of the statement and he says, "Gentlemen, I cannot tell a lie, even when I hear it."

And then there's the discussion between Dr. Stanley and the Baron as to whether or not Man had a tail before the Deluge. They left to find Adam and ask him.

About the controversy concerning the definition of STF—I have my own definition of science-fiction but the funny part is that it doesn't always hold true (I guess it isn't so strange, at that). For instance, according to my own definition, VALLEY OF CREATION is SF, but I regard it as fantasy just the same. In other words, I don't have a definition of SF.

What happened to Lewis Sherlock?

I refer Marion Zimmer to THE LAST MAN by Wallace West.

My friend, the Mad Scientist, has been fooling around with invisibility. Skipping such things as Jack London's complete transparency and absolute black, he tried bending light rays. Well, he succeeded—but not completely. You see, the bent rays impinging upon the unaffected rays caused a glowing halo about him. And that's not all. Since all light rays were bent past him, no light reached his eyes and he was totally blinded. Ah well, my friend is now experimenting with ingravity.

Rather liked WHAT MAD UNIVERSE though I expected it to be funnier. TETRAHEDRA OF SPACE was also good.

Thumbs down on St. Clair. I care nothing whatever about the little details of home life of the future.

The demon said, "We won't be apart long,
Don't you know,
There's a spot reserved for you
Down below."

Speak not to me of scanion (or spelling. Sneary has nothing on me).—*Box 2382, Williamson, W. Va.*

Mr. Bangs' hilarious epic is listed among our happier recollections—but we will thank you, Mr. Dye, not to make reservations for us in you-know-where. We consider ourselves quite capable of managing without help from others—in that direction at any rate. Who in hades is or was Sherlock?

TOP O' THE HEAP TO US
by Thomas Henry Carter

Dear Sir: As you know, it's not very often that I write to magazines, but the quality of your readers' column is of such a high level that I feel practically inspired.

Your mention of Bangs' HOUSEBOAT ON THE STYX brings back fond memories of the book. I still think the debate over who wrote Shakespeare's plays is one of the funniest things I ever read.

As to who plays the sweetest trumpet, I'd pick Billy Butterfield as all-time tops. That, incidentally, recalls a rather unhappy incident. One day a few months ago, while Butterfield was in town playing at our local night spot, I proceeded to tell the guy who runs a music store here, just how bad Butterfield is, just for the fun of arguing. In the midst of my detailed criticism, I glanced behind me. The gentleman breathing so quietly down my neck was Butterfield, himself! Fun, huh?

There is no point in saying how much your two magazines have improved; everybody knows it. It might be a good idea, however, to have Kuttner exercise his versatility of style and story-type, instead of limiting himself to this superfantasy, good though it is; you can get tired of ice cream.

The fanzine review remains an excellent feature, and your criticism is generally fair and accurate. Writing it, I should imagine, poses a nice problem. Although fanzine stuff seems to be for the past several months at a very high level, much remains pretty sad; but producing a fanzine still requires much blood-sweating. How then can you criticize when necessary, but still remember the difficulties that spawned the 'zine in question? Considering all that, I think you do a darn good job. Keep it up.

In closing, I wish you all the luck necessary to keep TWS and STARTLING on top of the heap.—*817 Starling Avenue, Martinsville, Virginia.*

Your incident with *le* Butterfield is reminiscent in reverse of Hearst-columnist Bill Corum's Lou Boudreau disaster. Corum, while broadcasting an All-star game a couple of seasons ago, had occasion to mention the shortstop play of Marty Marion. He went into rhapsodies about the Cardinal infield genius, comparing his play to all the other great shortstops he could recall—including Wagner, Dave Bancroft, Art Fletcher, Travis Jackson, Eddie Miller and so on.

His speech completed, he stepped back from the mike, mopping the Corum brow, and literally bumped into Boudreau, greatest of all current short fielders, who was sidelined with a bum ankle.

Corum apologized profusely for forgetting him while the commercials popped around them. Boudreau treated the whole thing as a joke.

But when the game was over and Corum was esconced in a taxicab en route to his hotel, a handsome young man in a handsome convertible, pulled up alongside during a red light wait and braked his car while carefully keeping both his hands away from the steering wheel.

"Look," he said to Corum. "No hands."

"What's the idea, Lou?" Corum wanted to know. "Are you trying to get yourself killed?"

"No," said Boudreau, "but I had to do something so you'd remember me."

WHO OR WHOM?
by Roberta Hesse

Dear Ed: The article looked pretty good to me. I don't know enough about the moon to comment so I'll let the rest of the readers who don't know anything about it tear the article apart. With a pitying glance at the cover we will turn to the stories.

WHAT MAD UNIVERSE . . . Quite entertaining. At least it gave this reader a laugh. Those none too subtle hints were rather like biting the hands of the dogs that feed you, but I bet every reader got a big laugh out of Doppelberg. He was so typical, and who can the fans laugh at more than themselves?

TETRAHEDRA OF SPACE . . . For once there is a good Hall of Fame opus. It was well written and, wonder of wonders, the alien race wasn't annihilated. May have been a little water logged, but everything came out alright.

SHORT CUT was a little cheesy. This Ridolph character is a little worse for wear. How about giving us a character who isn't the perfect model? Someone who blunders, or maybe even lies and steals. Hey, why not give us a story about Ul Quorn?

SHENADUN . . . a bit unbelievable. After long association with the human race, I find it hard to believe that any race could visit a weaker planet without conquest. Also, it is maddening to read, even in fiction, of someone getting the chance to do a thing you have always dreamed of doing.—*3208 25th Street SE, Canton, Ohio.*

You must have been out with some remarkably unpleasant lads, Roberta, to get such an opinion of *genus homo*. *Whom* could they have been?

ERRATUM-TUM
by C. S. Metchette

Editor, SS: Sir, you have made a mistake! I'm willing to donate the first copy of the Necronomicon if any fan, author, or artist can bring to light the Book Review of Merritt's and Bok's 'Black Wheel' in the September issue of *Startling*.

The Ugly Trio has now been replaced by the Terrible Twins, huh? The cover posslbly symbolic, but more likely sexy, shows SS's new system. No more scantily clad heroin, protected by John Carter of Mars, fleeing from the frightful BEM. No! Now it is the aforesaid scantily clad damsel fleeing across the intergalactic void, somehow without benefit of space suit or other unnecessary paraphernalia, from the sensually outstretched arms of a Bug Eyed Monster, also without benefit of respirator or oxygen apparatus.

Tell me, editor, how can *wind* be blowing the gurl's locks out in galactic space? Is the BEM breathing *in*, or is the fan in the office of SS's letter-editor blowing out an open window? Bergey never drew a nicely curved maiden, his damsels are old hags.

And why not Finlay on the cover? Once a year would be enough; enough, that is, the date that you come out annually. (I guess that takes care of that.)

At last, a science-fiction writer has written a yarn about a world as dreamed of by a stfan. And what starving, penny-a-word-pen-pusher hasn't? Oh, editor, shoot Mr. Brown . . . and to think he wrote 'The Waveries' . . . what a sad fate.

One vote for the discontinuance of HOFame; unless, and I suggest, that you run some Pete Manx tales. I'd like to see 'Dames is Polson,' 'DeWolfe of Wall Street' and 'Man About Time.' When I think of such HOFamers as "Conquest of 2 Worlds' and 'Disc Men of Jupiter' that have deserved the right to be reprinted, no more worse tales could be found, how can you continue to dub these in on the unsuspecting *new* reader? Bring back Sgt. Saturn ere you dare think of continuing HOFame. Or if you want a unanimous nay vote, why not run some old Cummings' 'Tubby' horrors? I leave the subject with that suggestlon.

"Rat Race" was fair, but not as good as the tale by Geosmith under the same title. "Shenadun," return of MacDonald from detective yarns, was extra good. Is there really a Shenadun, companlon to Everest? The Ridolph series runs its merry way with "Short Cut"; I laughed when he broke the bank, but didn't even see the light about the Mercator projection until some considerable thought took place.

The increase bodes ill for your competitors, edltor, for how can they offer a prozine containing 8 stories under all of Kuttner's alter-egos? That would be a memorable issue:

1. novel by Kuttner, (Henry)
2. a. a novelet by Padgett, (Lewis)
3. a. short by Hastings, (Hudson)
   b. short by Edmonds, (Paul)
   c. short by Cartmill, (Cleve)
4. article, by Will Garth, on 'Pseudonyms in Stfantasy'.
5. Part I of a serial by O'Donnell, (Lawrence)

All artwork by Charles Stoddard; proofreading done by Kelvin Kent, and model for the Terrible Twins cover, C. L. Moore. The pic-cover can be done by Hugo Gernsback, sensational new artist in the fantasy field!

As for the future, continue to run van Vogt, Hubbard, Kuttner (any of him), Leinster or Vance and I shall be on hand in front of the little cigar-store on the corner with my 25 silver pennies.—*3551 King Street, Windsor, Ontario.*

So you don't like the cover—so *what*, bub? And why you people expect a cover to be a literal illustration of an inside story is beyond us. Furthermore, the next time you spell heroine, put on the final "e"—our cover girls may be hags but they're not dopes. And for your private files, Cleve Cartmill is *not* Henry Kuttner. Nor are Moore, Stoddard and Gernsback!

I, PRODIGY
by Michael Wigodsky

Dear Sir; I just got a letter from Joseph B. Baker, in which he wonders how I could have read "such luminaries as *Shwa*, Kipling," and have read stf since 1940, when I must have been (and was) 5 years old. The answer is simple, and I intend to explain when I write to Mr. Baker, but, because of the remote possibility that some other fans may have wondered about this, I will, at the risk of seeming redundant (Seeming, huh?), include it here.

I read both the passage I quoted from Kipling and that I mentioned by Shaw about a year ago, and as both of them stayed in my mind, I was able to quote them with what I believe is reasonable accuracy. As for the 1940 issue of TWS I mentioned, I bought that about a year ago as a back-number-magazine. Does that satisfy everyone I *didn't* get letters from about it?

Earl Dodge informs me that my name was brought forward at the Torcon, as the youngest fan, but this was proved to be wrong. If *I* am not the youngest fan, then, by the Leonore Overture 3, who is, or who are, the youngest?

One comment on my letter in this issue, before going on to the usual insults: I am sorry about that "good stories, I will miss you" crack, and hope that all fans will discount it when they see my comments on the July issue. Still, as you know, I have a great dislike for Edmond Hamilton, who has, in the Startling lead novels of his I have read, plagiarized from Olaf Stapledon, E. E. Smith, Edgar Rice Burroughs, Eric Frank Russell, every one of the "hollow world" fantasy writers, Edgar Allen Poe, Stanley G. Weinbaum, George O. Smith, Murray Leinster, John Taine, and Jonathan Swift, as well as other notables such as Samuel Butler, Robert Heinlein, Jack Williamson, Mark Twain, etc. etc. etc. *He's the plagiarizingest man!*

First of the stories, of course, is WHAT MAD UNIVERSE, with a plot which is infinite, to say the least. It is so infinite, in fact, that Mekky's explanation quite thoroughly does away with any complaints I might have about the minor improbabilities which mar all but the last two chapters. I regret, however, that you partially gave the plot away with your mention of Doppelberg in OUR NEXT ISSUE, so that, with those few words, the value of the surprise ending was totally destroyed. Almost totally, anyway. I didn't anticipate Mekky.

Next in order were TETRAHEDRA OF SPACE and a tie between RAT RACE, whose title was, unfortunately, the same as that of a much superior story by George O. Smith, which appeared in another magazine, and SANATORIS SHORTCUT (This seems to be developing into a very superior series, which will probably be issued as a book sometime, if it goes on long enough. If it goes on longer than long enough, it will be a couple of books. I hope not.)

I haven't commented much on the above, as they are all fair stories, but I am really angry about SHENADUN. This story doesn't belong in the magazine! It should have been sent to one of your competitors, I mean one of the ones who can't compete with you. The first seven pages, to page 109, are excellent. I will only comment on a few of the less obvious faults of this story.

First, there is the idea of parallel evolution.

To have produced the giants of the story, there would have to be a planet equal to the Earth, identical, in fact, in all things except size, and we would have to assume that the inhabitants developed from the same basic materials as we, which, even with identical conditions, is doubtful. I would not object so, if this were a minor part of the story.

However, to have a story based upon this theory, a story which is sheer rubbish if the reader does not heartily believe in this theory, taxes my credulity too much. You should excuse the expresslon, but J. D. MacDonald has turned out a piece of absolute trash, which is not only completely unbelievable, even by an habitual reader of fantasy, but violates every principle of literary composition. In short, how did it get into your magazine?

(When I say "literary composition," I do not mean "literatoor," but the technique of any kind of writing. This is one of the few stories you have published which is not even readable garbage.)

After the above lambasting, I find myself without a large enough supply of usable insults to cope with the article or the departments. I'll only compliment you for not cutting out my pome because it included the first and last letters of your name, with a dash between. I wonder why you couldn't have made the same change in my comments on one of your stories, in TWS awhile back? Tell me, huh?

Just one more question: Why don't you get John Taine, the Great, to do an original novel for you.

whatever the cost, instead of publishing Hamilton's weak imitations? I'll bet on John Taine to out-write any sciencefictioneer alive today, including Kuttner. I wonder how he would have done against Weinbaum, giving each the same subject?

I said that that would be the last question, but here's another anyway: Why don't you publish a round-robin story, by at least four writers, again some time?—*7744 Ridgeland Avenue, Chicago 49, Illinois.*

Oh, *shwa*, Michael. We liked Shenadun and still do. As for John Taine, we only wish he would write us a full lengther. Your beef on Ed Hamilton is invalid. Better look up plagiarism a bit more closely before you throw that odious label around further.

Why drag back the round-robin idea? It has been frequently tried and as frequently found wanting. Hugh Walpole and J. B. Priestley probably perpetrated the worst of such stories some two decades ago. Mercifully we do not remember its title. But it was a lulu—we don't think. Again—*shwa*.

BUDOFF SMILES
by Lee Budoff

Dear Sir: The following manuscript came into our hands when we received from the descendants of Jonathan Swift a metal strongbox, which had been handed down by Mr. Swift to his descendants with the instructions that it was to be opened in the year 1948 A. D. In the U. S. A. How he knew that such a country would exist is a mystery that will perhaps be explained by the following pages. Although we turned over everything else to the British Museum, we kept this story. We are certain that you will marvel as we have at the accuracy of the author's knowledge of the twentieth century. I believe that you, and most especially your readers will find it of vital interest since it most closely concerns you, and of course, you are the ones most informed as to the actuality of such persons as Messrs. Wilson Tucker, Hoy Ping Pong, Jack Clements, and Miss Eunice Schaver. Above all, is, or was, there ever such a person as Lee Budoff?

Sincerely,
The Society for Historical Research
Joseph Doppelberg, Sec'y.

CONCERNYNG A MARVELLOUS TYME-TRAVELLYNG DEVYSE

I herein desyre to first congratulate Wilson Tucker, for Whom I bayre no Malice, for having Successfullie Built & Employd a Practycall Tyme Traveller. I, beeing of a Mathematycal turn of Mynd, did Deduce & Pruve to my Satysfaction this Astonyshing fackt. First, havyng established the Fackt that the Magazyne in Question, yclept Startlyng Storys, was first introduced Unto the Reeding Publick in the Year of Our Lord 1939, it was an easie Matter to Establish the year 1962 as tha Fyrst year that a person coud have Beene reedying the Magazyne for Twenty-three years. Synce the year that Mr. Tucker's lettre is Printed is 1948 anno domini, there are onlie Two possyble Conclusions to be Gottyn, Naymly: 1. That the aforesaid Gentlemann has seen a copy of a magazyne durying or after the Year 1962 bye the Meanes of Travellying into Tyme, or 2. Either said Magazyne or Mr. Tucker's letter Slypped out of its appointed Roundes and appyred at the wrong Tyme.

Now, although the Lattre Possiblility is Entyrely posiball, forthcoming Evénts proved the Actualitie of the former Premyse. I shall herein Relate to you the verry remarkabal Hystorie of the Journie that Mye Curiositie led me into.

Three Days before I began mye adventures, I purchased a cople of the Septembre, 1948 ishue of Startlyng Storys. I caym across M. Tucker's remarkabal lettre and it Gratelie ecksited mye Curiositie. I determined to track down the Mysterie to its Source. Now, bye gude Luck, I was ackwaynted wyth the most Excellente Mr. Hoy Ping Pong, a Chinyse Gentlemann & scholar, and the Most Intymate Friend of Mr. Tucker. I knew that if Anyone could lighten the Mysterie, hee was the One.

Hee Recieved me Kindlie, & in anser to mye Entreaties, hee finallie disclosed the Fackt that Mr. Tucker had indeed invented a Meanes of Travelling in Tyme. Hee had enterred the yeare 1963, anno domini, and altho not Possessed of the Currencie used at the tyme, he had obtained a Copie of Startlyng Storys by tradyng off an Ancient Fowntain Penne.

Beeing a Gentlemann of a sense of Humour, Hee decided to Write a Lettre to the Edytor of the Magazyne, commenting in a Scholarlie fashion upon the Contents, Gyving as hys authority twenty-three years of Reedershipe. HowEver, when hee finyshed hys Lettre, hee was rudelie interrupted bye the Inhabytantes who desyred to see hys Identyfication. Sayd Inhabytantes beeing of the Quaynte Habyt of Incarceratyng all unidentyfied Persons.

Beeing verie prudente, Mr. Tucker promptlie returned to the Tyme wherein hee belonged, The Lettre hee had writ styl in hys Cote Pockyt. Although hee forgot about It, hys frend Pong, who hapend to bee visyting hym, notyced the unmaled lettre, & beeing of a kyndlie Disposition, Stamppd & Mayled it. When Mr. Tucker finalie Recalld hys Lettre, hee was informd bye hys Chinyse frend of hys action, and thought it a gude joke.

Juste as Mr. Pong finyshd tellyng mee of these wondrous Eventes, Mr. Tucker stept from behind a Sylk pannel where hee had beyn all the Tyme. Saith hee, Quote: I trust ye hav founde my frend's Narative interestyng, butte unfortunatelie for ye I wysh to Keepe my invention a Secrete for mye own Personyl Use, & therefore I regret that I shal hav to dispose of bothe ye & Mr. Pong, much as I dislike the Action.—Unquote.

I did not Relysh beeing shotte wyth the Wicked-lookyng weaponn hee was brandyshyng, beeing, as Mr. jack clements wude say, a mere wommen & cowarde, so I did not resyste. When we arrived at Mr. Tucker's Howse, it soon became moste Evydent that we were to bee disposd of in the most Foolprufe way posibal: we were to bee flung into Tyme without the Meanes of Returnyng. Unfortuneatelie, Mr. Tucker hadde not yet devysed a means of accuratlie controllyng the destinations of the Traveler, & so we hadde no Notion of where we wude end, either in regarde to Tyme or Playse.

I do notte know whatte became of poore Pong, butte as for Myself it did notte take mee longe to fynd that I was in Englande & that the year was 1691. I have beene singularlie Fortunate in escaping Acusation as a Witche, butte bye Teeching the Populace some verie Holie Songs & Hyms of mye own Tyme beside other Musick, I am regarded as beeing verie Holie.

I hav made the valuabal & delitefull Acquayntance of Mr. Jonathan Swift, who is at the present Tyme secretarie to Sir Wm. Temple, here at Surrie. Hee is the onlie one to whom I have confyded my strange storie, & hee sympathyses with mee. Upon hys gude Advise, I am now dictatyng thys Naratiff to a young Scribe who is noted for the Beautie of hys Hand and the Excellence of hys spellyng & Gramar. Hee is a retyring lad yclept Richard Sneerie.

Mr. Swift has takken such a Fancie to mee & my Narative, that hee has consented to place a copie of mye Storie among hys own Works, which Workes will be seald away in a Strong Bocks notte to bee opened until the Yeare of Our Lord 1948. I shall sine mye naym & Future Address to this storie myselffe, in the Faynt hope that if it fall into the proper Handes, the gude Edytor of Startlyng Stories will recall my Hande.

I wish to close upon one Finalle note. Allthough no-one can accuse Mr. Tucker of the thyngs I have sayd, I wysh that Miss Eunice Schaver, who has a Lettre in the sayme issue as Mr. Tucker's, would Recalle the Tyme Machine when the Iravte Feemayl Reeders set theyre Eys upon her Admited Treacherie to the Fayre Sex.—*1130 E. Brill Street, Phoenix, Arizona.*

We wyssshe so tue—blast it, it's contagious. Thanks for the riotous epistle.

GOTLUM SPELLED BACKWARDS IS—
Raleigh Evans Multog

Dear Ed: This will be the first letter that I have

ever written to a Science Fiction magazine, so you should feel honored. By the way, the first Science Fiction story I ever read (I don't seem to recall the title or the year, do you) was where all the earth inhabitants were in one special city, and in that city people were trying to give away money instead of making it.

In fact, instead of lowering the poor guy's wages if he did any thing wrong, the owners raised it. Also there was what was called a "hold down". That was where people, or crooks, tried to make you take money instead of making you give them money. Remember that story, Ed.? If so, what was the year it was put out?

Your stories are swell. I just finished reading the September ish of Startling Stories. Wheredidja think up them there stories, huh Ed? My favorite story in the magazine was "What Mad Universe." By the way, why not have some one write Time Machine adventures back in the Civil War. Do you know any writers that would be interested in that kind of stuff with whom I could get in touch with?

Say Ed., will you please toss this letter gently into the waste basket? Say if any fans want to get in touch with me, I will be glad to get in touch with them.—*7 Greenwood Road, Pikesville 8, Maryland.*

Working from bottom to top, Mr. Multog, we don't know any authors currently engaged in rewriting and refighting the War Between the States, suh. Margaret Mitchell, apparently has said it all. The two novels you seem to be thinking of are CITY OF GLASS and IRON MEN, both by Noel Loomis. The first appeared in this magazine in July, 1942, its sequel in the Winter, 1945, issue.

EXTRA SOLAR
by R. R. F. Bailey

Dear Editor: I received the September issue of *Startling Stories* yesterday so I took it to bed to read a bit before dropping off. I glanced at the first story, got interested, couldn't stop, kept on until 3 in the morning, when I found I had read right through the issue.

"What Mad Universe" is the best story you've printed in SS for many moons. In fact the whole issue is the best you've turned out this year.

"Rat Race" is a very close runner up to the lead novel. Let's have more of the de Courcys, they've really got something.

"Sanatoris Short Cut," though tops in any other issue, is eclipsed by the above two.

"Shenadun" is only fair.

Farnsworth's article was excellent, it gave the mag another boost upwards.

Whatever anyone says, notably Jim Goldfrank, keep The Ether Vibrates in small type. That way you can print more letters. Normally I read The Ether Vibrates & S F F P first, they are just two of the things which make SS stand out above its competitors.

Mrs. Eva Firestone—at least extra-solar planets have been discovered, one each in the double star systems of 61 Cygni and 70 Ophiuchi. An object of low mass (planet) has been discovered attached to Cincinnati 1244. These stars are respectively 17, 11, and 16 light years away so there is likelihood of plenty more being discovered when we get more powerful instruments. Who said space was a sphere? According to Einstein it is curved, but it is not a sphere in the three dimensional sense. Anyway the term Universe includes all the other visible galaxies as well as ours.

Well that's all this time, keep up the good work and make the rest of Vol. 18 as good or better than No. 1 issue.—*Market Place, Melton Mowbray, England.*

Now if somebody will just come up with an overdrive that works a la Leinster, we can all go calling come tea time, on relatives (BEM's maybe) residing in 61 Cygni. Seriously, we're intensely interested in discovery of extra-solar planets. We don't understand why or how anyone should doubt their existence.

TIME FOR THOUGHT
by Robert A. Rivenes

Dear Editor: The September SS has recently come to my attention. It used to be that I could pass a newsstand without giving the mags a second glance. But now that I know what is hidden behind those torrid covers, I am drawn like a maggot to them. Although double ess hasn't got the greatest outside drawing power, it is tops in the inside. However, it can be said without fear of contradiction that there is tremendous room for improvement. (Listen to that, will you. Only a "stiff" frosh and all ready I've gripes.)

Something that has always fascinated me in the chain publishers' mags is the pre-dating of the magazines. The job under consideration is blandly dated September, is on sale in July, and contains letters about the May ish. I have tried double intergration but still the purpose of it all eludes me.

Along with the new increase in length, you should equip SS and TWS with covers that automatically close for five minutes at the end of a story so that it can thoroughly be considered before proceeding. As it is now, I go rapidly from one story to the next. Before I know it the end has been reached. I get the effect on recapping of one novel made up of all the stories. I can't voluntarily slow down as there are always a dozen back-numbers waiting patiently on the shelf.

By rapid calculations on my three hands, I come up with the number four which represents the lapse of time in months between issue and letters pertaining. By the time the letters are published, the stories are old enough for the HoF. How about taking time out to set up some arrangement so that letters can appear the following issue. I suppose with the increased size my big, fat, sloppy suggestion is pfft.

Maybe the solution of stf versus fantasy can be dealt with by finding who, where, and why (also when) the distinction was originated. For a starter, the earliest record I can find of the use of the words "science fiction" is in a 1934 copy of "Amazing." Take it from there.

Another improvement that would be beneficial would be the inclusion of a biographical sketch of one author an issue. It would prove that they are people rather than machines.

And how come you have two magazines published alternately when one would suffice. They are almost identical in foremat.

Finally we get down to the stories.

1) *What Mad Universe*—Detective story writer Fredric Brown couldn't have written a better novel for his entry into stf. The take-off on a certain chain, a certain pulp editor, and a certain fan should endear him to all fendom. The plot, variation of the "if" deal, was far from static. I hope that Fred doesn't turn to stf hacking but instead waits until he really has something to write about like WMU.

2) *Tetrahedra of Space*—True classic but marred by stilted style and prolonged drum conversation.

3) *Rat Race*—Typical de Courcy humor on switched evolution plot.

4) *Shenadun*—MacDonald, hack senior grade, comes up with a wordy nothing.

5) *Sanatoris Short-Cut*—If the balls were in a pyramid, how could the operator see all of them in the third row. The artist tried to save that mistake but it doesn't hold. Really rates a minus infinity.

6) *First Target in Space*—Non-fiction, huh?

Thirty to the thirtieth power—*431 N. Euclid, Oak Park, Illinois.*

The answer to most of your gripes and queries, Bob, is simple. Just remember that the publishing business has schedules, mechanical problems, deadlines to meet. Your question re Short-Cut has us scratching our collective head. We dunno.

WHERE'S TOPSY?
by Mrs. Eva Firestone

Dear Editor: There is a sequel. The title—Conquest

of Moon Pool. Read it several years ago. A copy in Santa Monica library or L.A., can't remember. My vote is an emphatic NO to the suggestion of Furman H. Agee, Jr. Please notice that he is a Junior. Respect to our Elders is the rule. Thereby, I claim precedence. Isn't it possible that this heretic Agee is liable under law of the Humane Society? Ninety-nine and nine tenths read the letters first.

What would happen to our morale without Zimmer, Sneary, Ed. Cox, and Wigodsky? Fearful thought! And how else could we enjoy acquaintance with the Editor, since he won't reveal his name. There is truth in the statement, that much time and effort are necessary and perhaps once in awhile it becomes tiresome. However, you do receive pleasure from the correspondence? Including the Rhapsodies?

Valley of Creation interesting. There seems to be a jarring note, top p. 45, r. Would one of this brotherhood slay another animal? Wish had been a picture of Shan Kar on p. 11, instead of Eric Nelson. Realities Unlimited good, but why drag in mush by nape of neck? When Shadows Fall excellent. When the Earth Lived not up to his mark. Want more about the Hogbens. Hard Luck Diggings ok, am fond of Magnus Ridolph. Quis Custodiet really a fine story. Perfect Servant only fair. Shenadun 100%, Sanatoris Short-Cut 95%, Tetrahedra of Space 93%, Rat Race 90%, and What Mad Universe 80%. Could you print a story by Raymond F. Jones? He wrote The Children's Room. It is beautiful and needs a sequel. Thank you greatly for "First Target in Space" by Farnsworth. Hope to see more like this. Some day we will learn that the stars are not nearly so far away; That our telescopes magnify distance, just as the microscope creates the illusion of a vast depth.—*Upton, Wyoming.*

Thanks, Eva, and for being a good girl or reasonable facsimile thereof, we hereby inform you that a nice shiny new Hogben story came across our desk recently and was promptly purchased. You'll be seeing it soon.

CHEESEBURGER
by Joe Schaumburger

dear editor,

I

i see people liked my other letter
this is very good because i like people
and it is cheering to find out
that it works both ways

II

i thot the latest ish of ss
marvelous
colossal
stupendous
and magnificent
it almost matched the last ish, in fact

III

"what mad universe" was a great story
a marvelous story
a true classic of scientifiction
i say that not because my name is somewhat
similar
to the hero's
not because i like parallel-world type of stories
but because it was!
it was the best thing to hit stf since
leigh brackett's "shadow over mars"
pardon me
i rave

IV

the cover
struck me

V

the other stories were ok
"rat-race" was about the best
"tetrahedra of space" was foul
if h-o-f is going to have stuff like that
then why h-o-f?
why indeed?
"new material" i cry!
"down with the old!
up with the new!"
and anyway
think of all the book-dealers you put out of work
by making the old classics available
fans read these old classics

[*Turn page*]

SELLS FIRST STORY AT 60

"Since I am crowding threescore, my objective in taking the N.I.A. course was not to become a professional writer. However, while still taking the course, I sent an article to St. Joseph Magazine. It was immediately accepted. Encouraged, I wrote others. Our Navy accepted them and asked for more. All thanks to N.I.A."—Albert N. Hinman, 1937 East Silver Street, Tucson, Arizona.

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"phew" they say, holding their nose
"if this is the best of the old stuff
then what must the rest of it be like?"
what indeed?
so they don't buy old wonder stories
used-book dealers starve
stores fold
people lose their jobs
breadlines!
and you—
it's all your fault.

VI

the letters: well well well
well
sneary was excellent—as usual
so was zimmer and spelman and berner
and dietz and wigodsky
one small cheer for gwen cunningham
did i say small?
i meant a BIG CHEER
'RAH FOR GWEN CUNNINGHAM!

VII

if this is too long
cut out a section or two

VIII

fanzine reviews: grrrrrrrr
the SAPS is *not* sub-sophomoric!
you're just jealous
oh poo—*1822 Bathgate Ave., Bronx 57, New York.*

the SAPS is so
sophomoric
with
or
without
the opening "sub"

if you think for
a mo-
ment that
we are spoofing
just turn to the fanzine
re-
view

now go
away
like a nice schramburgle

A MOURNER FOR CLEMENTS
by Lee Randolph

Dear Ed: I cheer and brighten perceptibly when I find that jack clements hhas been told off so nicely by all my feminine contemporaries. I see that he didn't dare show his face this issue.

I greatly rejoice to see so many fem-fans out. I can remember the time, not so long ago, when all the top names were men. But, knock wood, our so called week-end sex seem to be getting stronger and stronger. More power to us!

I see that Robyn leRoy has returned to the fold. I'm glad, in a way, to see his gibberish again. I sort of missed him. I miss all those original guys when they don't show up.

Thank you very much, dear Editor, for that interesting article, *First Target In Space*. It was the most interesting thing in the whole issue, aside from the letters. The possibility of life on the moon is very intriguing. Perhaps with the new Palomar "Big Eye," we can tell for certain. I hope so.

What! My smelling salts, quick! Bergey has actually done what the story says. That is, almost. I am speaking of the dream sequence. Bergey, I'm proud of you.

The novel, WHAT MAD UNIVERSE, was the best story this time. I hope to see more of Mr. Brown. Who did the illos for that story? I am getting tired of these anonymous artists. Why don't you put their names *under* each picture, where a person can see it?

Jack Vance, with his Magnus Ridolph series, is really going to town. The story this issue, SANATORIS SHORT-CUT, is better than the last one, but both were good. I like to see people beat a fancy gambling machine. It proves that people are superior to any machine. At least I think that's what it proves. At any rate, it proves something.

I had better stop this babbling, before I start aimlessly wandering in my thoughts. I'm very adventurous . . . in my mind.—*4429¼ Willow Brook Ave., Los Angeles 27, California.*

Vern Stevens did the illustrations for WHAT MAD UNIVERSE, Lee. We don't know why the artists don't sign their work more regularly—but don't you like to be kept in the darkness? It's fun guessing.

INITIAL MAN
by Charles Henderson

Dear Editor: After reading, "What Mad Universe" I felt compelled to write you my first mss. "What Mad Universe" will live with me forever as one of the most humorous and suspenseful novels I've read yet.

I nearly died laughing at Brown's version of, "The Life of an Stf Editor." And my heart was in my throat as Keith Winton was stumbling through the "Mist Out."

Lawrence (?) did a wonderful job of illustrating and my favorites are pages 13 and 21. Wish I could have a blown up job of page 13 to cover one side of the wall in my bedroom.

Earle Bergey did a wonderful job on the cover and I hereby disown the SFTPOBEMOTCOSFP as what would Bergey be without his Bug Eyed Monsters? Why, probably another Lawrence. So bring on the BEM's chasing lovely girls who forgot to put on their dresses. Lush, Lush.

Shenadun is my next favorite of masterpieces and should be placed in the file of HoF for the Sept., 1968. The HoF, this ish, was good but it almost forgot to catch my attention, almost . . .

Lots of luck to the best stf zine out, from a happy subscriber, for the next centuries.—*2146 East 13th South, Salt Lake City 5, Utah.*

Once again, and with a deep sigh, that was not Lawrence, it was Stevens. And once again we pause to explain patiently that he took the pseudonym of Lawrence for a time only to avoid confusion with his son, also an illustrator. Otherwise, thanks for a pleasant note.

EVOCATION TO KELLER
by Paul Spencer

Dear Editor: I stopped reading TWS and SS around 1940, having gotten fed up with their juvenility. Recently, hearing rumors of improvement, I have been trying an issue now and then, and am quite pleased with the results. There is a great deal less blood and thunder, more originality and a greater effort at maturity of ideas and presentation. In addition, the art work has improved 100 per cent, especially with those beautiful jobs by Finlay. The editorial comments are a delight—intelligent when serious, uproarious when written with tongue in cheek. Congratulations on your successful efforts to improve the tone of the magazine—and here's hoping the trend upward continues, in which case I'll become a regular instead of an occasional reader.

Criticisms seem to be in order, if only to lend an air of plausibility. So I'll register violent objection to:

a. The covers. Why should I be different from everybody else?

b. The blurbs for the stories. These are usually in the bad old TWS tradition, aimed at the moronic type of pulp-magazine browser. However, I'll admit I've seen much worse, and have no desire to press the point.

c. The readers' letters. I think you probably do have some readers who are out of their teens, but writing letters to the editor doesn't seem to appeal much to adults (myself, I write perhaps one a year). Anyway, most of the letters you publish are pretty silly; the one redeemong factor is that they give you the opportunity—of which you gleefully and courageously take full advantage—to pin the writers' ears back.

There seems to be a minor controversy in progress as to whether you should publish stories by David H. Keller. Well, that depends on the stories, of course. He can write poor stories as well as good ones. But generally speaking, I'm heartily in favor of a return of the Kelleryarns to the s-f mags. DKH's stories are usually very original, and his highly distinctive style lends a refreshing touch. I for one am not afraid of "sermons," either, if done as entertainingly as Keller usually writes.

I've read an unpublished Keller novel which probably would go over well in SS or TWS: "The Feminine World." I found it extremely fascinating, somewhat off the beaten path, and believe it deserves publication. How about it?

I hope the increase in the number of pages won't force a lowering of your standards. Frankly, the magazines still have a little way to go before I'll be brought back to the fold permanently, but I think you're headed in the right direction.—*88 Ardmore Road, West Hartford, Conn.*

We'll do our darnedest, Paul. We agree with you about Dr. Keller. However, his recent writing has been a bit too heavy on philosophy for our liking. He seems to be aiming for something far afield from our current policies.

WELL, HOW ABOUT THEM?
by Samuel Trenchard

Dear Editor: Thanks for the Sept. ish. I enjoyed it. And—where's my rubber stamp—AND HOW ABOUT TRIMMED EDGES? I won't blast you on the score of the covers. I like Bergey sometimes—e.g., this ish—neat and tasteful. What I don't like are these garish fugitives from the beef trust, with their tattered scarlet briefies. So long as Bergey puts imagination

[*Turn page*]

NEXT ISSUE'S HEADLINERS

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By MURRAY LEINSTER

•

THE LOOT OF TIME

A Hall of Fame Novelet

By CLIFFORD D. SIMAK

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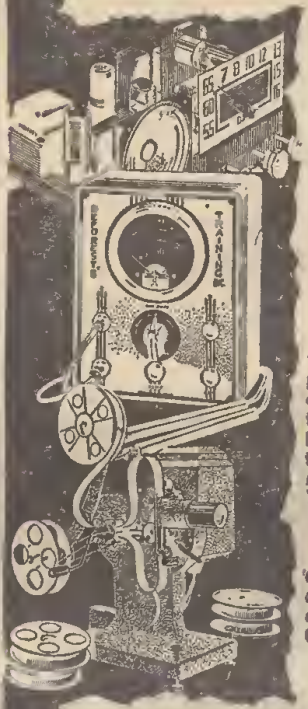

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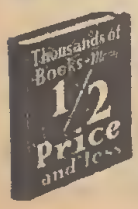

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and taste into the coloring and composition of his jobs, I for one won't kick.

A few words on the letter section. First, Ed. Cox. The "news" of life on Mars is a) not really news; b) not really conclusive. For at least the last twenty years, most unprejudiced astronomers, when they bothered to think about it, have accepted the view of limited life on Mars. The newest bulletins just strengthen the view. But it's probably very primitive life—something on the order of the primitive plant life found in our own Arctic tundras. No animals. And Weinbaumic intelligent plants are very unlikely: plants, being sedentary, don't develop nervous systems. And except for means of broadcasting their seeds or spores, and the odd freak such as the pitcher-plant, they don't become motile. A plant's job is to sit where it is, and either make food by photosynthesis, or swipe it from decaying other life (as the fungi and bacteria do).

As for the 200-incher being of any use for finding out about Mars—they don't plan to use it for that purpose. The average astronomer raises a bored eyebrow when you talk about life on Mars. He's much more interested in using his stuff for making progress in astrophysics, space-time theory, etc. That's what the Big Boy is intended for. They have a programme of years of star-surveying (particularly in the farther galaxies) mapped out for it. Why bother about our planets, when we can rocket there in another 20 years or so (atomic weather permitting)?

But I still hope Ed makes out all right with his projected Maine fanorg.

I also quarreled with some of the points in Mrs. Firestone's letter. First, we definitely are *not* the only solar system. There have been at least three others (my information is no later than 1944) found; and what's more, they're so close to our own system that, on the basis of probability, there are plenty of systems farther out. True, we can't see such other suns' planets directly, but we know they're there because of perturbations in the orbits of their suns. We discovered Pluto, and before that, Uranus and Neptune, only because of their effect on the orbits of their neighbours.

As for the geometrical location of the galaxy—the Universe *is* curved, but not a sphere. You can't locate it—or any of the other galaxies—by thinking in terms of simple everyday experience, because the geometry of space-time involves a lot of stuff which is completely outside the simple mechanical models we're familiar with. In fact, its facets are so alien that they can be handled only as mathematical abstractions on paper. The best you can do in concrete terms is to give simple analogous illustrations. But analogy can be carried only so far.

I'd like to shred the de Courcys' science of "Rat Race," but instead I'll comment on the point raised by friend Agee as to streamlining the letter-section. Personally, I am squarely against this childish eagerness for every possible line of stf. in the issue—its partisans would have you printing on the back page if they could. There is a definite place for the letter-section in the magazine. For my money, it's one of the best parts of the issue. But I do agree that letters should be curtailed.

The childish feuding and self-dramatization should be left out. I don't mean that controversy and ego-boo should be junked entirely; but it should be kept on a reasonably adult level. In re that, I suggest you follow the course you said you were going to a couple of years ago (but apparently haven't): that of cutting the letters. There is no need to include all the windiness and plays for attention (e.g., leaving out capitals, sloppy or pseudo-phonetic spelling—unless it's Sneary's—etc.). I would urge you to start slashing immediately. Begin at once, with the letter following this.—*care of 445 Mt. Pleasant Ave., Westmount, Que., Canada.*

Okay, Sambo, we begin slashing at once.

CABOOSE
by Seymour Simon

Dear Editor: May I congratulate you on the new *Startling Stories*. I don't mean the format or the illustrations, but the quality of the stories. I recently picked up one of your magazines, the July issue I believe, and was pleasantly surprised to note that you had overcome your greatest weaknesses—i.e. charac-

terization, smooth writing. I have reconverted to *Startling*.

The September issue was fair to good, with Shenadun getting the nod as the best. Rat Race was an interesting idea, but inadequately developed, and poorly explained. The feature novel, What Mad Universe, and Sanatoris Short-Cut were both fun reading. Tetrahedra of Space while good, seems to be hardly a classic.

No doubt you have heard this complaint before, but you never do anything about it. Your covers are in incredibly poor taste.

C. A. Metchette. I was under the impression that someone named Lawrence O'Donneli wrote "Fury". Is M. Kuttner also Lawrence O'Donnell? If that be the case I'm a Kuttner fan for life.

Miss Marion "A" Zimmer. I would assume from your letter that you are a reasonably intelligent young lady. But, my dear Miss Zimmer, you write too much. Half of what you say is unnecessary. Anyway, anybody who reads anything over sixteen times must be slightly awry.

Ed Cox. The 200 inch won't be used for objects as near as Mars. There is an explanation for this that I won't go into. Your theory of Martians evolving is neither original nor much good. There are something like one thousand reasons why it's so silly. Reasons to both statements on request.

Might I close with a request for van Vogt, Asimov, Heinlein, G. O. Smith, and M. Leinster.—*64 Jesup Pl., New York 52, N.Y.*

We'll give you all of the above we can get our meat hooks on. Swell authors, every one. And now, we'll carry Mr. Trenchard's suggestion through more fully by cutting this short. *Adios* and keep writing.

—THE EDITOR.

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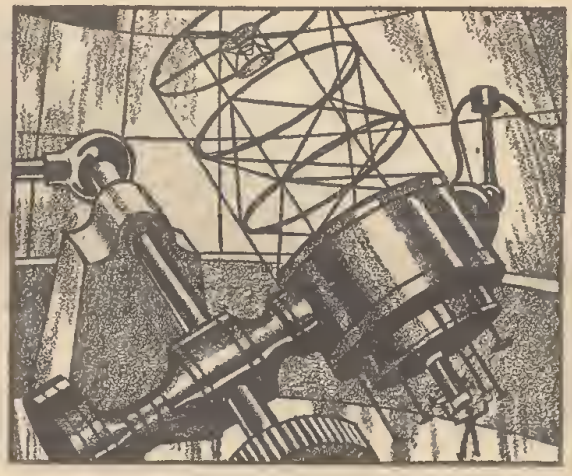
REVIEW OF THE FAN PUBLICATIONS SCIENCE FICTION

DON Wilson of 495 North Third Street, Banning, California, writes in with a mild beef on our handling of the so-called Fantasy Amateur Press Association or FAPA mailings. He says in part—

". . . many FAPA readers have indicated in their zines or elsewhere that they definitely do *not* want outsiders writing for copies. We produce 70 copies to cover the membership, send them to the official editor and consider our job



done. Then, long after the issue is finished, the mag might be given an A-listing in your review column. People who read that review will write inquiries—and answering such queries takes up precious time . . . My suggestion is that you create a special FAPA listing and review FAPA mags there and there only . . ."

Very well, Don, it's more or less what we tried to do in the September edition of this persityle. But to avoid any such future confusion, why doesn't FAPA adopt some sort of cover stamp that marks their magazines beyond any possibility of confusion or error?

We also drew a FAPAnning from something called SKYHOOK, chiefly for panning the poetry in one of these magazines. The wounded versifier hastens to suggest that "FAPA mailings henceforth not be sent the promags for review" since the tone of our study of same was not calculated to bring in new members.

Redd Boggs of 2215 Benjamin Street, N.E., Minneapolis 18, Minnesota, the injured party,

seems to pack a bit of influence in FAPA, for no recent mailings have turned up here for review. And all we said of his opus was, "Good thoughtful comment on fantopics which suffers from a sea anchor in the form of some of the worst verse ever (up to and including our own)."

Surely, a gentle criticism. *Tsk, tsk!*

The fanzine crop this time around is distinguished by an unexpected and apparently one-shot revival of a former fangiant, LE ZOMBIE, product of Wilson R. "Bob" Tucker, the well known detective author and stfan, who has dedicated this resurrection to the recent Toronto Science Fiction World Convention, otherwise and variously known as TORCON.

LeZ and Tucker are in riotous form with a fake table of contents calculated to drive any fan to the rim of hysterical lunacy and a too-brief interior in which we found Editor-Author-Publisher Tucker's sad account of how he invariably missed the convention free-loading the highlight. Also amusing a future-calendar of fandom for the month of July, 2048, which should cause many laughs and not a few shudders. We wish Tucker would cease at once any further meretricious writing for mere money in order to concentrate again on LeZ.

The British Fantasy League, determined not to be left lagging in the ruck by more active American fandom, came up with a successful convention of its own, entitled WHITCON, last May 15th, which is duly reported by Ken Slater's OPERATION FANTAST in an excellent special convention issue as well as in an intriguing WHITCON BOOKLET.

Present were some fifty British fans, including such well known authors as Bill Temple, Arthur C. Clarke and George Whitley (A. B. Chandler), as well as chief British faneditor, Walter Gillings. Captain-Lieutenant Slater, on occupation duty in Germany, was of course not present but sent over a goodly sum for general health-drinking.

The meeting, which took place at the White Horse in Fetter Lane, near Leicester Square, London, followed much the pattern of American fangatherings and was followed by another gathering in Kew Gardens the following day. It sounds like a lot of fun and we wish we could have got over there somehow.

Maybe FAPA has given us the brush but

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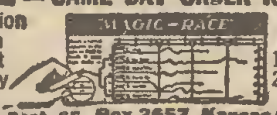

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the more irreverent SAPS (Spectator Amateur Press Society) have come in with a full mailing which we shall list pronto, before tackling the general reviews. With a couple of exceptions they are far too personal and amateurish to rate complete and public criticism, so for the most part comment will be brief or non-existent.

COAL, the Peatbag Periodical, 1822 Bathgate Avenue, Bronx 57, New York. Editor, Joe Schaumburger.

FANDEMONIUM, 200 Williamsboro Street, Oxford, North Carolina. Editor, Andy Lyon. A darned good job starred by summarization of an obsolete but intriguing German Gothic opera entitled DER FREISCHUTZ. Well thought out and well presented.

FLASH, Box No. 6, Helena, Montana. Editor, Walter A. Coslet. Swap stuff and zootie.

FROZINE, 448 Demarest Avenue, Coster, New Jersey. Editor, Phil Froeder. Joe Schaumburger, versifying amusingly about orange wombats and less amusingly about tribulations of space flight, makes this one passable.

FUNCYCLOPEDIA, 68 Madbury Road, Durham, New Hampshire. Editor, Boff Perry. The title tells the story of this one—and it's rather fun at that.

HALF-FORMED DREAMS, the editor, whoever he may be, forgot to list any information.

KEYNOTER, 584 East Monroe Street, Little Falls, New York. Editor, Harold W. Cheney. A one-man job of some merit, especially in its satiric study of a "big name fan."

NAMLEPS, 75 Sparks Street, Cambridge 38, Massachusetts. Editor, Henry M. Spelman III. Brief reviews of other SAPSines.

THE NEW SIXER, 3 Church Street, Cambridge 38, Massachusetts. Published bi-weekly by Troop Six, Boy Scouts of America. How did *this* get in here?

PLOOR, P.O. Box No. 6, Helena, Montana. Editor, Walter A. Coslet. Indubitably the best of the SAPS publications, with more meat and including a lot of stuff from and about Ed Cox and a pair of Tedsturgeon letters.

THE PLUTONIAN EVEN MOON, 84 Baker Avenue, Dover, New Jersey. Editor, Joe Kennedy. JoKe in playing punning mood in this one-sheet interplanetary "newspaper."

QUEER, 1724 Mississippi Street, Lawrence, Kansas. Editor, Norm Storer. Combined with the defunct ARCTURUS, QUEER still lives up to its title.

RESONANCE, 3401 6th Avenue, Columbus, Georgia. Editor, Paul D. Cox. Chiefly occupied

by a sort of hill billy space opera which shows some promise.

SAPIAN, 813 Eastern Avenue, Connorsville, Indiana. Editor, Ray C. Higgs. Mostly gags, some of them mercifully not in cartoon form.

SAPORIFIC, R.F.D. No. 1, East Greenbush, New York. Editor, Marion Zimmer. As our poetically minded editorialist says, "It's at least legible."

SNARL, 705 West Kelso, Inglewood, California. Editor, Lloyd Alpaugh. Slanstuff by Brazier, and a couple of involuntary riots in verse by Davis and Grant.

SPACEHOUND'S GAZETTE, 84 Baker Avenue, Dover, New Jersey. Editor, Joe Kennedy. The JoKe in good form as he reviews a forgotten 18th century fantasy and tees off hard on one of our prozine rivals.

THE SPECTATOR, The SAPS, according to the "official" brochure, seem to be broke. We hope someone kicks in with a contribution to keep them afloat.

SUNSHINE, R.F.D. No. 4, Somerville, New Jersey. Editor, Lloyd Alpaugh, Jr. Nice stuff, some thoughtful, some amusing, chiefly the account of a fanmeeting in a NYC bookshop.

THE VOYAGE OF BOOJUM, no address. Editor, Stanley G. Merritt. A cartoon issue which retails the life of a BEMmish giant with too much reliance on captions.

WORLD AFLAME, Joe Kennedy plugs a prophetic (We don't hope) story of World War III.

YELLUM, c/o A. E. Garretson, Ministry of Foreign Affairs, Addis Ababa, Ethiopia. Editor, Ron Maddox. Best feature. A parody of Lewis Carroll's famous poem entitled THE HUNTING OF THE FAP.

And now, at last, to the usual A-listings. Once again they dominate in quantity as well as quality the lesser B-list offerings. So, let's at 'em—

THE FANSCIENT, 3435 NE 38th Avenue, Portland 13, Oregon. Editor, Donald B. Day. Published quarter. 15¢ per copy, 50¢ per annum.

A neat if hard-to-read sub-pocketized organ of the Portland SFS. Artwork is above fanzine average thanks to Messrs Day and Waible and poetry is strong. Fiction is represented by an F. Lee Baldwin fantasy and the essays on various stf subjects are thoughtfully written by Neil R. Jones, Sam Moskowitz and others, including a self-profile by pro-author Jack Williamson. All in all a good issue.

FANTASY ADVERTISER, 1503¾ 12th Avenue, Los Angeles 6, California. Editor, Gus Willmorth. Published bi-monthly. 10¢ per copy, 50¢ per annum.

Still the classic modern magazine for collectors, dealers and the like. Featured, like all recent issues, by essays, chief among them being a Julian Parr piece of fantasy in postwar Germany and an essay

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on the late W. Paul Cook by Earle Cornwall. Willmorth deserves a lot of salutes for this one.

FANTASY REVIEW, 115 Wanstead Park Road, Ilford, Essex, England. Editor, Walter Gillings. Published bi-monthly. 15¢ per copy, 75¢ per annum.

The ever chatty, informative and interesting leader among British fanzines. Eric Frank Russell features the issue with an article on Charles Fort that rates hallelujahs and the book and magazine reviews are topflight as ever.

FANTASY TIMES, 101-02 Northern Boulevard, Corona, New York. Editor, James V. Taurasi. Published monthly. 15¢ per copy, 2 copies 25¢, 8 copies $1.00.

The July and August issues are preoccupied with convention activities but this in no appreciable way cuts down their review and general faninformation sections. Editor Taurasi has a Woollcottesque space-anecdote in the August edition that is excellent fanzine fiction.

FIRST PERSON SINGULAR, Apartment 20, 1116 Georgia Street, Los Angeles 15, California. Editor, Stanley Woolston. Published irregularly. No price listed.

A promising newcomer, very nicely printed, in which someone has apparently taught our old correspondent, Rick Sneary, how to spell. His story is a dream sequence for those who like such items. George Fox, Len Moffatt and Louise Hathaway contribute articles, John Strange a fanorthodox poem.

THE GORGON, 4936 Grove Street, Denver 11, California. Editor, Stanley Mullen. Published bi-monthly (?). 20¢ per copy, 7 copies $1.00.

Most ambitious of current fanzines if anything heightens its standards this time out. A roto section which pictures fans and fannettes in various degrees of informality means something new has been added. Poetry and essays continue strong although we query Phil Rasch, who claims the Kraaken to be legendary. Mine sweepers during the war are supposed to have come up with the corpse of the real McCoy. However, 'tis a small quibble against a fine fanzine.

KAY MAR TRADER, 3401 6th Avenue, Columbus, Georgia. Editor, Paul D. Cox. Published irregularly. 5¢ per copy.

An increase in articles, fiction and poetry against the ever-present valuable swap-information and advertisements do this issue no harm. Art Rapp and Bruce Pollica, along with Schaumburger, seem to dominate the proceedings despite a couple of entries by R. Flavie Carson. Valuable to actifans.

LOKI, 46 Johnson Avenue, Hackensack, New Jersey. Co-editors, Gerry de la Ree and Mrs. Genevieve K. Stephens. Published quarterly. 10¢ per copy.

Short prose takes by Gerry, Dr. Keller and Richard Shaver, along with a substantial letter column and editorial feature a magazine given predominantly to fantastic verse by such well known fanauthors as Mrs. Stephens, Dr. Keller, Schaumburger, Shaver, Russ Woodman, Lin Carter, Flavie Carson, Marion Zimmer, Tom Carter and George Ebey among others. A mighty high-toned deal.

MACABRE, 68 Latimer Avenue, Toronto, Ontario. Co-editors, Jack Doherty & Don Hutchison. Published bi-monthly. 10¢ per copy, 3 copies 25¢.

Despite horrendous artwork this is one of the best of the Canadian fanzines to appear. Dr. Keller has a deep inspirational essay on the nature of man entitled "Animals or Gods" and much of the rest of the issue is perforce given over to TORCON activities. But entertainingly and informatively withal.

THE MUTANT, 22180 Middlebelt Road, Farmington, Michigan. Editor, George Young. Published bi-monthly. 10¢ per copy, 3 copies 25¢, 50¢ per annum.

Messrs. Young, Metchette and Rapp have combined on this, the "official" organ of the Michigan SFS to good effect. As much of their space is devoted to Michigan affairs, we gave it a once-over-lightly, finding Rapp's article on the religious beliefs or lack of same of Charles Fort more intriging. Artwork weak.

OPERATION FANTAST, Riverside, South Brink, Wisbech, Cambs., England. Editor, Kenneth F. Slater, Esq., Special issue. Price 3d.

This is the Whitcon issue already mentioned in this column and constitutes a fine meaty report on the London May gathering. It also contains considerable speculation on the reason for fanzines anyway, which are amusing if not profound.

PEON, 2116 Edsall Court, Alameda, California. Editor, Charles Lee Riddle. Published bi-monthly. No price listed.

This is put out by a Navy fan, who has managed to assemble good examples from such well known fanziniacs as Gerry de la Ree, Albert Toth, E. E. Evans and Sam Peoples. Evans wins the slightly motheaten bay leaf wreath among them. If the art improves, a promising newcomer.

QUANTA, Room 1030 of the Transportation Building, 17th & H Streets, N.W., Washington, D.C. Editor, Miles Davis. Published irregularly. 10¢ per copy, 3 for 25¢.

Another "official" organ (what is this—a trend?), this time put out by the Washington SFA. Philip N. Bridges contributes a lengthy prozine history which omits all mention of this magazine (.!) and, more fittingly, Will Lissner leads off with a report on denunciation of American stfans from Moscow. Jittery.

SCIENCE FANTASY & SCIENCE FICTION, Box A, King's Park, New York. Editor, Franklin M. Dietz, Jr. Published bi-monthly. 15¢ per copy.

Another pocket-sized 'zine whose photo offset only partly conceals some mighty poor artwork. How come so few competent artists are fans anyway? Outside of Bok and Kline they're pretty sad of sack. For the

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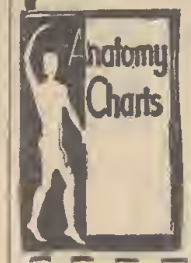

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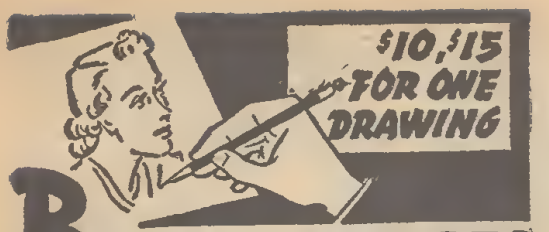

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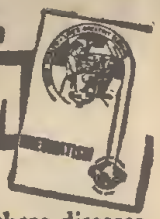

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rest, the mag is okay, with a good balance of fact and fiction with Jimmy Taurasi contributing the latter in adequate shape.

SHANGRI-LA, 1116 Georgia Street, Los Angeles 15, California. Editor, Dale Hart. Published bimonthly. 10¢ per copy, 3 copies 25¢, 6 copies 50¢.

Editor Hart writes his own valedictory in this, one of the weakest issues yet of one of the hardy perennials of stfan publishing. As usual, the minutes of the LASFS metings, this time recorded by Jean Cox, provide the most amusing reading in the 'zine. Let's hope this one picks up and soon.

SPACEWARP, 2120 Bay Street, Saginaw, Michigan. Editor, Arthur H. Rapp. Published monthly. 10¢ per copy, 3 copies 25¢, $1.00 per annum.

One of the liveliest of current fanzines, the three summer issues of the Rapp-Groover hektochild are remarkable for luridly ghastly covers and highly personal and gossipy reading matter by such well-known fans as Gregg. Nelson, Ed Cox, Mulcahy, Conner Stein, Weber, Singer and Paul D. Cox. Highlight of all three issues to us is Keith Hoyt's documentary method of trisecting an angle, any angle. We're still trying to figure if it will work.

SPEARHEAD, 817 Starling Avenue, Martinsville, Virginia. Editor, Thomas H. Carter. Published irregularly. 10¢ per copy.

While William Track opens up the proceedings with a brash study of H. P. Lovecraft that fails to come off, the balance of the issue, with more or less short takes by such stalwarts as JoKe, King. Rapp, Pederson, Blyler, Hudson and the like, pull this second-shot solidly onto the A-list despite a splotchy cover job.

THE SYDNEY FUTURIAN, Box No. 61, The Union, University of Sydney, New South Wales. Editor, G. B. Stone. Published monthly. 3d per copy or 6 American publications.

The official organ of the Downer Unders has doubled in size recently, which is an excellent symptom of growth. But the magazine is still chiefly concerned with reports of the society it represents, correspondence, swap news and the like to have assumed definite character of its own. We hope this is the next development.

UNIVERSE, 433 East Chapin Street, Cadillac, Michigan. Editor, Ray Nelson. Published bi-

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monthly. 10¢ per copy, 3 copies 25¢.
The first two issues of a good looking newcomer by the increasingly active Michifans. While the first issue seemed a bit too naive in its approach to universal problems, the second, with stories by Shapiro and Editor Nelson, a couple of passable hunks of verse and a quartet of solid articles, was a whole lot better. Walter T. Nelson gives stf authors a much-needed boost.

Well, the A's have it and the B's are mercifully short. So let's get it over with quickly. *En avant*—

CONTRIBUTOR'S CIRCLE, 1135 East 19th Street, Salem, Oregon. Editor, Lee Christman. Published irregularly. No price listed. Highly personalized doings of a West Coast fangroup. Semi-newzine stuff.

LIBAU, 316 East 211th Street, New York 67, New York. Editor, Lee D. Quinn. Published irregularly and for free. A briefie, chiefly dedicated to the proposition that most prozine covers are a definite drag on stf progress. Who knows?

PSFS BULLETIN, 3435 NE 38th Avenue, Portland 13, Oregon. Editor, unlisted. Published 8 times per annum. Price unlisted. Newzine of the Great Northwest.

REJECT, 548 North Dellrose, Wichita 6, Kansas. Editors, Telis Streiff & David D. McGirr. Published irregularly. No price listed. Juvenile illegibility.

THE ROCKET NEWS LETTER, 91 Pina Avenue, Riverside, Illinois. Editor, Wayne Proell. Published monthly. 15c per copy, $1.50 per annum. Not as flossy as it used to be but still great stuff for rocketaddicts.

SCYLLA, 396 Orange Street, Northumberland, Pennsylvania. Editors, Harry Strunk & Earl Dodge. Published irregularly. 15c per copy. This one may hit the A-listings shortly if its editors can pick up the pace a trifle—especially in artwork.

Which brings us to the end of one of the longest fanzine reviews on record. We have tried to be fair and accurate and, after some of the pastings we take in THE ETHER VIBRATES, fail to see why any of you should mind getting *your* shell-pink ears pinned back. Honestly, we don't do it often and hope we have still more 'zines to review sixty days from now. So be it.

—THE EDITOR.

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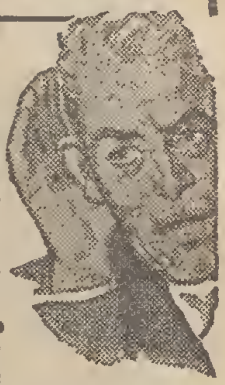

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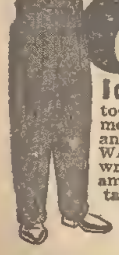

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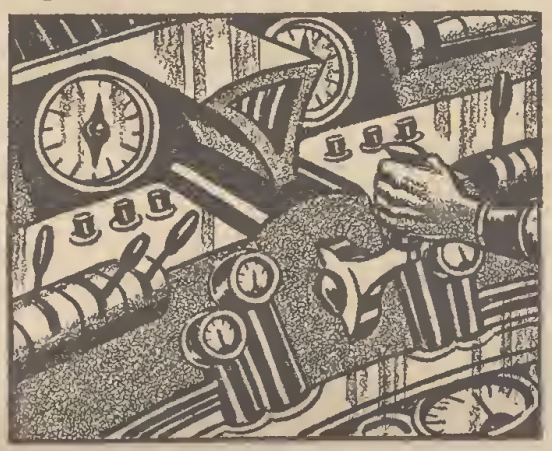
SCIENCE FICTION BOOKSHELF

REVIEWS OF NEW BOOKS

BEYOND THIS HORIZON by Robert A. Heinlein, Fantasy Press, Reading, Pennsylvania ($3.00).

Although the publisher's jacket blurb seems designed to keep the fact a deep and dark, if not dank, secret from the reader, Mr. Heinlein's opus of a gadget-ridden Utopia with pistols at virtually no paces is one of



the most penetrating satires on *genus homo* we have read up to and including Aldous Huxley's Ape and Essence job.

Like any halfway decent book of its genre, "Beyond This Horizon" can be read on two levels—one, an excellent and well-plotted melodrama of days to come, two, a sharp incision into the fatheadedness of the species which refuses to improve its basic instincts even under the impact of a Chaplinesque version of the Garden of Eden.

Indication of the author's basic aim is almost immediately evident through the selection of his hero's means of livelihood. Hamilton Felix (Felix, of course, means "happy," not necessarily "cat") is a sort of benevolent pinball machine magnate who, up against the decision of a board of super geneticists who decide all problems of matrimony (thereby saving much wear and tear upon living room carpets, to say nothing of the upholstery of futureworld aerial runabouts) does a fine job of bobbing and weaving before he will take unto wedlock a distant cousin of uncertain disposition.

He becomes involved with one of the most remarkably unmotivated conspiracies of all time against the wise, gentle and ineffably colorless rulers of his particular future-

cosmos and winds up in the diametric middle —eight-balls have long since gone the way of all Brunswick-Balke-Callender products.

But H. Felix is a remarkable man, whether it be for his highly understandable refusal to cooperate with the geneticists and next century's pinup girl or for his unerring marksmanship with the doughnut guns that play a leading role in the social amenities of time to come a la Heinlein. A sort of Lucius Beebe of an age which has, mercifully, not yet descended upon us.

He takes a long time to be coerced, unlike the reader, who, if he has any resemblance in taste to ourselves, is virtually certain to be quickly enchanted with this well conceived fable. The portraits of the scientists, especially one named A-for-Alpha Monroe, or vice versa, are so cunningly drawn as to be only accomplished by a member of their tribe—which Mr. Heinlein can lay justifiable claim to being, as well as to possibly the Montezuma quill cloak among science fiction authors.

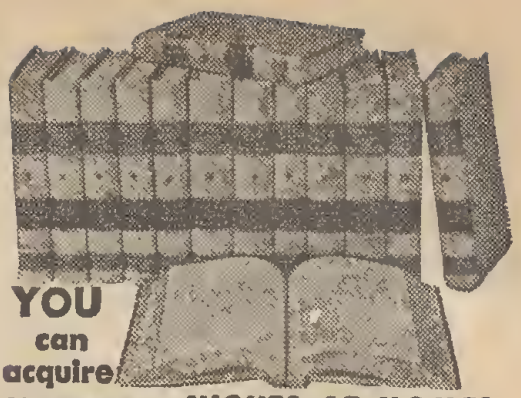
One of the best we have reviewed in these pages.

WHO GOES THERE by John W. Campbell, Jr., Shasta Publishers, 5525 Blackstone, Chicago, Illinois ($3.00).

A baker's half-dozen novelets by the eminent editor are here well presented along with an introduction by their author. All of them are distinguished by clearness of concept and each, in treatment of what it sets forth, is a thoroughly individual story, connected neither in theme nor in method to its neighbors.

Of them we found the title tale—which is a sort of gruesome development of Admiral Richard Byrd's annals of Antarctic exploration—*Blindness,* a story of incredible human sacrifice (or is anything connected with humanity incredible?) and *Twilight,* a saga of the horrors of a completely man-created world, the most engrossing.

However, the four other stories all have merit and it is very close to being a case of take-your-own-pick. The book constitutes one of the ablest one-man anthologies of science fiction that we have yet read.



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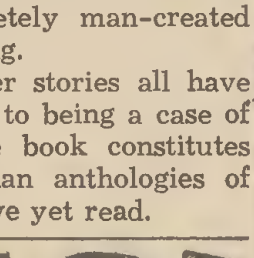

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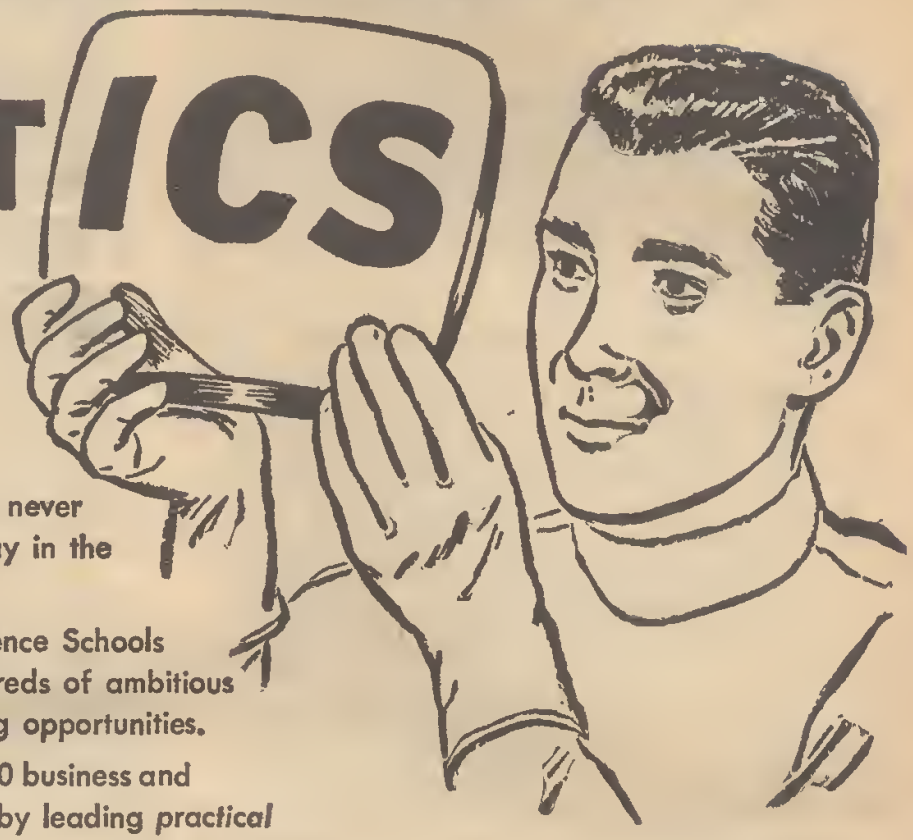

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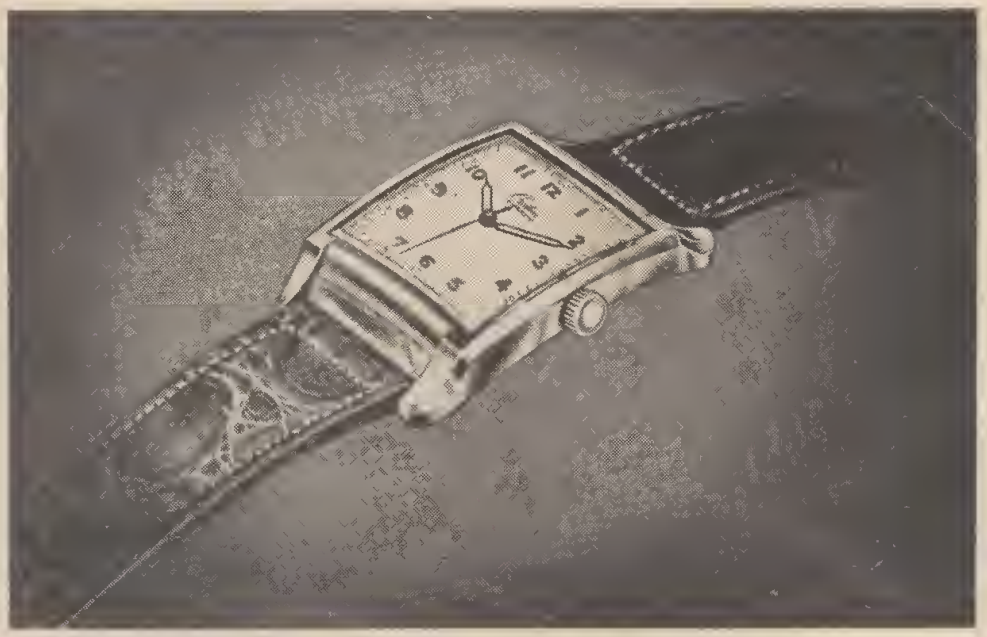

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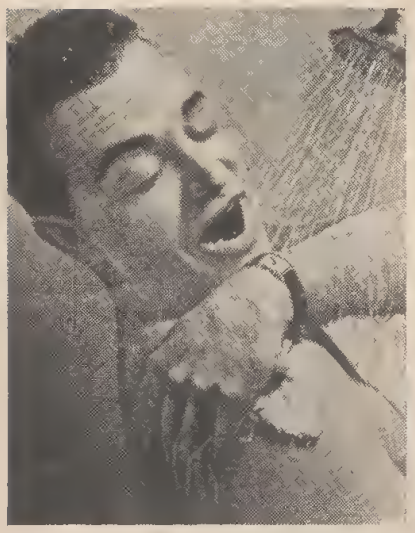

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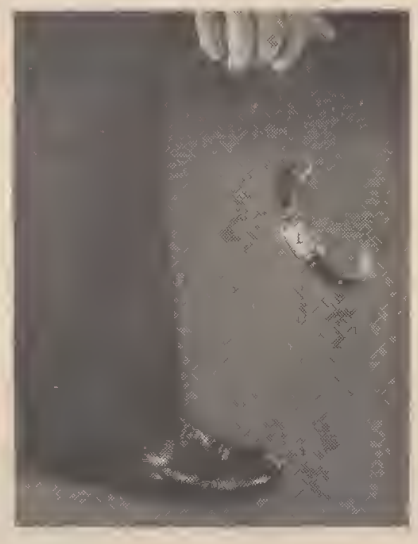

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